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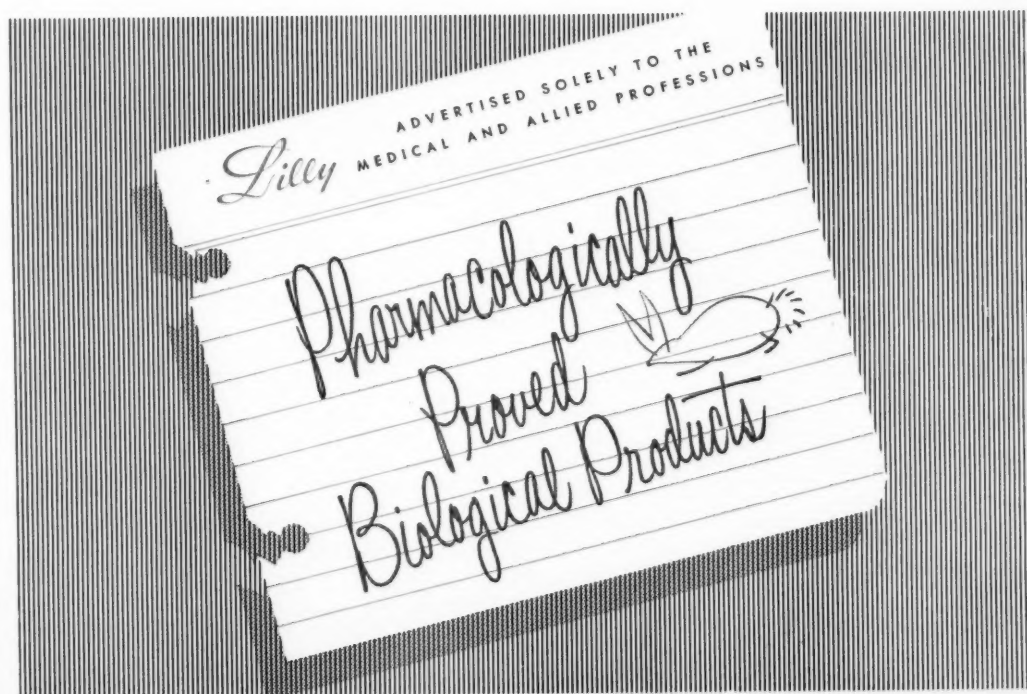
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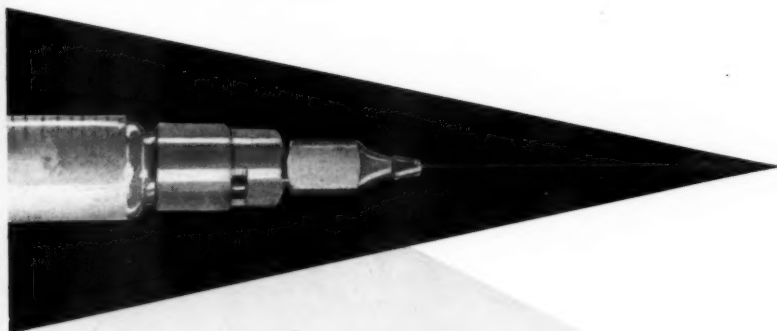
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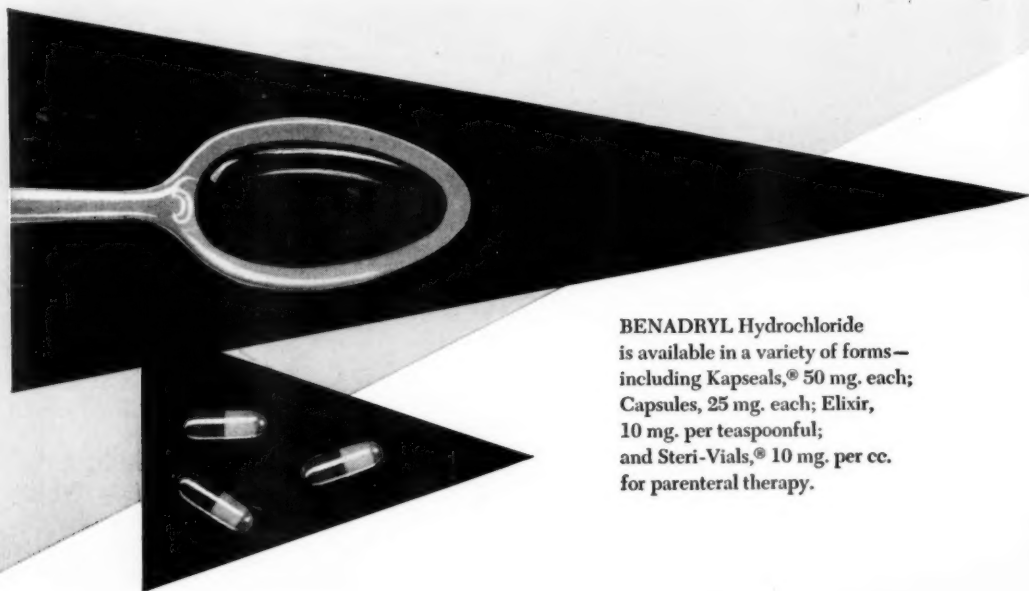
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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36

June, 1953

Number 6

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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

Volume 36

June, 1953

Number 6

## THE FUTURE OF THE MEDICAL SCHOOL OF THE UNIVERSITY OF MINNESOTA

E. T. BELL, M.D.

*Emeritus Professor of Pathology  
University of Minnesota Medical School  
Minneapolis, Minnesota*

I HAVE chosen to speak of the future of our medical school rather than of its past. We can learn from the past but we cannot change it. The future is what we make it. The Medical School has a short past but an infinite future. It will go on as long as our society endures. When the youngest of us has passed on it will still be young. We cannot conceive of any form of society except barbarism in which it will not be necessary to train physicians. Even Soviet Russia with her harsh despotic government has medical schools, although they have probably deteriorated. The socialization of medicine, undesirable as it is, would not weaken medical education.

We cannot plan very far beyond the span of our own lives, but we can build a solid foundation for those who come after us. We should plan now to meet the problems that we can foresee.

I think of the Medical Foundation as a self-perpetuating body composed of men and women with a deep interest in medical education and an unselfish devotion to the medical school. I think of it also as a permanent advisory council always ready and willing to support the school. I do not think we should interfere with the administration except in a dire emergency. Certainly we should not interfere with the splendid present administration, but there was a time about forty years ago when the school was saved from disaster and started forward by the intervention of three loyal alumni, of which our beloved Dr. Ed Tuohy was one. But for these three men our progress would have been delayed a score of years. If such a

situation should arise again this organization should come to the rescue.

What are the problems that the medical school faces in the foreseeable future?

### Shortage of Physicians

The people in the rural areas of the state are complaining bitterly because they have no doctors, and their voices are growing louder in the legislature each biennium. There are as many doctors per thousand of population as we have ever had, but a great many are in the armed services and there is every indication that this situation will continue for a long time. A more important cause of the shortage is an increased public demand for medical service which has been stimulated by health programs. It is hard to find a physician at the present time who does not have all the work he can handle. If the population of the United States continues to increase as anticipated and the output of medical graduates remains the same, there will eventually be an even greater shortage. We know that the shortage of physicians is not due to a deliberate action of the medical profession in curtailing the supply of young doctors, but the public thinks it is our fault. They believe we are like a trade union which restricts the number of apprentices they will train. We must do something about this situation. If we continue to ignore it the public may give us something that we do not like such as socialized medicine. I believe that we must try to increase the number of doctors without sacrificing the quality of their training. How can we accomplish this?

It seems easier and less expensive to increase

An address to the Minnesota Medical Foundation, May 18, 1953.

the enrollment in existing schools than to establish new ones. One very important point that our legislature does not understand is that nearly half of our graduates go to other states, and other states supply a large percentage of Minnesota doctors. If we should double the enrollment at Minnesota it might not help our local shortage. Our graduates might go to other states as half of them now do. Any helpful action must be on a national scale. If all the State-supported schools or a majority of them increased their enrollment it would improve the situation. We cannot expect the private medical schools to act since they are not under legislative pressure.

If Minnesota should increase her enrollment as much as 50 per cent the quality of instruction would deteriorate unless our staff and teaching facilities were correspondingly increased. The state would be obliged to spend more money. Expansion of the basic science departments could be accomplished without a great outlay of money, but a suitable increase in the hospital services would involve an enormous expense if it could be accomplished at all under our present system.

But we could have enormous clinical facilities without any additional expense if we could persuade the people of our state to build federal, state and municipal hospitals on or near the Medical Campus.

The Veterans Administration is now convinced that their hospitals under the supervision of medical schools give vastly better service to veterans than those placed in small communities. They want to have their hospitals run by the medical schools, but Congressmen and other politicians often thwart them and get the hospitals located where they are inaccessible to medical students. Let us get the veterans' organizations to support us in demanding that these hospitals be built near medical schools. The State could then train more doctors with little additional expense.

The State should build at least one mental hospital near the campus. We do not have an adequate medical staff in any of the state hospitals, but such a hospital near the campus would be well

staffed and would supply desirable clinical material.

Minneapolis should build its new City Hospital on or near the campus. A city hospital provides a rich variety of clinical material. Patients are better cared for in a teaching hospital since the staff know that they are being criticized by eager young minds. The University of Cincinnati uses the Municipal hospital as its sole source of clinical material. About forty years ago the Rockefeller Foundation offered to build Minneapolis a hospital on the University Campus. The regents offered the land free, but our shortsighted City Council declined the gift.

One of the tasks which this organization might undertake is to persuade the people of our state that they can have more doctors without much additional expense if they will build their federal, state and municipal hospitals accessible to the Medical Campus.

#### General Practice and Specialization

In the past there has been much criticism directed at the medical school because a disproportionate number of graduates become specialists. However, this situation is improving. Because young men have had to spend two years or more in military service they do not have the time to devote three years to preparation for a specialty and more of them are going into general practice. We should make special provisions for these men such as a two-year internship with emphasis on Internal Medicine. There is an unfortunate tendency for men in general practice to take up major surgery without adequate training. Unnecessary and incompetent surgery is injuring the reputations of all of us and creating a distrust of doctors. Perhaps we teachers do not spend enough time indoctrinating our students with their obligation and responsibility to the public which has borne the major share of the cost of their education.

Our medical school now ranks high as a center for good teaching and creative thought. Let us try to maintain this excellence. I have every confidence that those who come after us will carry on.

---

Because of wider and broader education people have learned the value of modern medicine in relieving and preventing sickness. New health attitudes are resulting from intelligent health education.—HUGH R. LEAVELL, M.D., *New England J. Med.*, (Dec. 4) 1952.

## PATIENTS' IMPRESSIONS OF A COMMUNITY MENTAL HEALTH CENTER

CHARLES KRAM, Ph.D., and N. J. BERKWITZ, M.D.

Minnesota Department of Public Welfare

Albert Lea, Minnesota

THE *Albert Lea Community Mental Health Center* is a state-supported unit under the supervision of the Department of Public Welfare of the state of Minnesota. It began operations in January of 1951.

The clinic has a twofold purpose. Follow-up treatment is provided for patients provisionally discharged from state hospitals who reside near the clinic. In addition psychiatric care is offered to indigent state residents upon referral by their family physicians. The clinic also acts as an educational center for the community regarding mental health matters.

The staff consists of a psychiatrist, a psychiatric social worker, a clinical psychologist, and a clerk-stenographer. The clinic is located in one of the office buildings in the center of town.

Treatment consists of psychotherapy, eclectic in nature. Faradic stimulation<sup>1</sup> combined with intravenous sodium amytal is given as an adjuvant to psychotherapy in a fairly large percentage of patients treated.

In the Spring of 1952, it was felt that a sufficient number of patients had been seen to warrant making a survey. This survey was to have a threefold purpose: (1) to obtain the patients' opinions of clinic services; (2) to inform the clinic of means through which these services could be improved; and (3), to gain information as to the efficacy of the treatment.

It was decided to employ a questionnaire form to be mailed to each patient and ex-patient. Simplicity and brevity were stressed in constructing the questionnaire and the accompanying explanatory letter. A code number was typed on each questionnaire, and fairly inconspicuously located so as to permit for anonymity if desired by the respondent. The code number allowed for identification of the patient.

The questionnaire consisted of six items. The first five items comprised attitudes regarding cessation of therapy, benefits received, returning to the clinic if necessary, and the no-fee basis under which the clinic operates. Each item could be answered by checking one of the several possible

replies listed under each of the five items. The sixth item invited criticisms and suggestions.

A total of 172 replies were received. Fourteen letters were returned because the present address was unknown to the post office.

TABLE I.  
NUMBER OF QUESTIONNAIRES SENT AND RECEIVED

	Ex-Hospital Patients	Privately Referred Patients	Total
Number Sent	65	277	342
Number Received	55	186	241
Per Cent Received	84.61%	67.14%	70.46%

One month later a follow-up letter with a questionnaire form was again sent to 156 individuals of the original 342. These were the individuals who had not replied formerly. The follow-up letter elicited more than a 20 per cent increase in the number of replies. A greater percentage of ex-hospital patients replied than did the non-hospital patients.

A total of 69 replied to the follow-up letter. This yielded a grand total of 241 replies out of the original 342 forms mailed. Table I presents this information with corresponding percentages.

In almost every instance, the patient himself filled out the questionnaire. There were a few instances wherein the patient was a youngster or illiterate and where, therefore, a parent or a spouse replied for the patient.

Not all the respondents answered each item on the form. There were 30 forms returned completely blank but accompanied by a letter. There were also 42 forms which were found to be partially blank. Consequently, in compiling the total results for each item, it was necessary to determine a separate index, from which individual percentages were then computed.

### Results

It shall prove significant in the interpretation of the therapeutic results, in Table II to keep in mind that almost 70 per cent of the replies were from individuals who were no longer receiving therapy.

# COMMUNITY MENTAL HEALTH CENTER—KRAM AND BERKWITZ

TABLE II. PATIENT STATUS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	54	100.00%	186	100.00%	240	100.00%
Present Patients	6	11.11%	68	36.55%	74	30.83%
Former Patients	48	88.89%	118	63.45%	166	69.17%

TABLE III. REASONS FOR TERMINATING THERAPY

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	36	66.66%	97	52.15%	133	55.41%
Maximum Benefits Achieved	20	55.55%	70	72.16%	90	67.67%
Against Clinic Advice	0	00.00%	9	9.27%	9	6.76%
Extraneous	16	44.45%	18	18.54%	34	25.56%

The indices indicate the percentage of replies to that specific item, from the total number of questionnaires returned. The percentages underneath are then computed from each index, taking that index-percentage to be 100.00 per cent.

It may be noted that 16.61 per cent more of the privately referred patients ceased therapy because of having received maximum benefits. None of the ex-hospital patients stopped therapy against the advice of the clinic.

As may be seen from Table IV, 8.98 per cent more privately referred patients felt they had improved as a direct result of therapy whereas 9.75 per cent more patients stated a lack of improvement. This may be partially explained in that privately referred patients are seen more frequently and receive more intensive psychotherapy. The ex-hospital patients usually receive direct counseling.

It is interesting to note, in Table V, that 3.45 per cent more ex-hospital patients stated a preference for returning to the clinic. Although, as a group, fewer had considered themselves improved in comparison to privately referred patients.

The fact that 10.23 per cent more ex-hospital patients preferred paying a fee may be accounted for in that having been previously hospitalized they had already received more state aid and possibly felt more indebted. At any rate, the total 16.12 per cent, who were in favor of fees, constitutes a large enough percentage to merit further deliberation on the matter of charging a nominal clinic fee.

TABLE IV. PATIENTS' OPINIONS OF THERAPY RESULTS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	40	74.07%	156	83.87%	196	81.66%
Condition Improved	30	75.00%	131	83.98%	161	82.14%
Therapy Terminated	2	5.00%	9	5.76%	11	5.61%
Prematurely Condition Unchanged	8	20.00%	16	10.25%	24	12.24%

TABLE V. PATIENTS' FUTURE PLANS REGARDING CLINIC TREATMENT SHOULD PSYCHIATRIC CARE BE NEEDED

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	32	59.25%	79	42.47%	111	46.25%
Will Return	25	78.13%	59	74.68%	84	75.67%
Will Not Return	7	21.87%	20	25.32%	27	24.33%

The ex-hospital patients found more to criticize negatively than to approve, when compared to the privately referred patients. However, when many of these criticisms are examined, they are found to be projections of near-psychotic mentations. For example, one such patient felt we lacked divine inspiration, another felt guilty because by attending the clinic he was acting contrary to God's wishes.

A number of suggestions were helpful and the clinic intends acting upon them. For example, one patient stated she felt uneasy at meeting other patients in the clinic who were from her home town. Several patients preferred not having "Mental Health Center" mentioned on the phone when being called, as they were on party lines.

Furthermore, about ten patients who had stopped therapy against clinic advice, found themselves eager to return after ventilating themselves in this part of the questionnaire.

Over half of the respondents were sufficiently interested to voluntarily write letters, in addition to completing the questionnaire. More than 40 per cent found no objection to signing their names to their replies.

A small percentage refused to admit patient status even though in each instance the clinic files held contrary evidence. A total of six former patients (2.50 per cent) stated they wanted to

# COMMUNITY MENTAL HEALTH CENTER—KRAM AND BERKWITZ

TABLE VI.  
PATIENTS' ATTITUDES TOWARDS LACK OF FEES

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	37	68.51%	149	80.10%	186	77.50%
Prefer No Fee	28	75.68%	128	85.91%	156	83.88%
Prefer a Fee	9	24.32%	21	14.09%	30	16.12%

TABLE VII. PATIENTS' SPONTANEOUS COMMENTS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	13	24.07%	85	45.69%	98	40.83%
Approval and Appreciation	6	46.15%	56	65.88%	62	63.26%
Constructive Criticisms	3	23.08%	6	7.05%	9	9.18%
Negative Comments	4	30.77%	23	27.07%	27	27.54%

sever all relations with the clinic. No one of the six offered any reasons, however.

Another measure of therapeutic success may be seen by the fact that only 3.75 per cent, a total of nine patients, had required hospitalization following their visits to the clinic. Five of these nine patients were seen at the clinic for examination only. Following this, hospitalization was recommended.

## Conclusions

A questionnaire survey was made of 342 patients who had attended the Albert Lea Community Mental Health Center for examination and treatment. The period of treatment extended from January 10, 1951, through May 1, 1952. A total of 241, or 70.46 per cent, replied.

The following significant trends are indicated:

- 69.17 per cent of the respondents were no longer in therapy.
- 67.67 per cent had achieved the maximum benefits the clinic could offer.

## BARRIERS AGAINST DISEASE

Our community-wide barriers against disease, applying to large groups rather than only to individuals and not possible except through organized action, are: physical—filtration of water, pasteurization of milk, improved housing, and air pollution control; physiological—widespread immunization programs, better nutrition, and fluoridation of water supplies; epidemiological—

TABLE VIII. MISCELLANEOUS FACTORS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	54	100.00%	186	100.00%	240	100.00%
Spontaneous Letters	29	53.70%	94	50.53%	123	51.25%
Names Signed	27	50.00%	90	48.38%	117	40.87%
Denied Being a Patient	4	7.40%	18	9.13%	22	9.16%
Requests No Further Correspondence	3	5.55%	3	1.61%	6	2.50%
Hospitalized Since Therapy	4	7.40%	5	2.68%	9	3.75%

- 82.14 per cent felt improved as a direct result of therapy.
- 75.67 per cent plan to return to this clinic if they should need further treatment.
- 83.88 per cent preferred the absence of fees.
- 63.26 per cent spontaneously expressed appreciation and approval of the clinic.
- 51.25 per cent voluntarily wrote a letter in addition to answering the questionnaire.
- 3.75 per cent have been hospitalized.

The purpose of the questionnaire has been fulfilled. The results suggest that the form of psychotherapy offered meets with success in a majority of cases (82.14 per cent). In addition only 3.75 per cent of the total required hospitalization. Most of the patients seen, 63.26 per cent, were appreciative of the clinic's efforts, and approved of the clinic routine. Many of the suggestions offered by 36.72 per cent of the respondents shall be incorporated into the present clinic framework so as to provide improved satisfactory service.

## Reference

- Berkwitz, N. J.: Out-patient treatment with faradic (non-convulsive electric) stimulation. *Dis. Nerv. System*, 13:3-12, 1952.

## PRIMARY NEOPLASMS OF THE LUNG

### Review of Minneapolis Public Health Center Cases

DE FOREST R. HASTINGS, M.D., F.A.C.P.  
Minneapolis, Minnesota

THE various primary neoplasms of the lung are more frequently diagnosed than formerly and their increased incidence is recognized. Heretofore clinicians believed that chest tumors were rare, their antemortem diagnosis almost impossible and the treatment so unsatisfactory as to make a careful search for them a variable waste of time and effort. These tumors may now be removed with relative safety as a result of the newer methods of surgery. Thoracic surgery is available in almost all parts of the country and there is justifiable reason at this time for all physicians to give great heed to the early diagnosis of these lesions. Community-wide chest x-ray surveys have revealed a certain number of these neoplasms hitherto unsuspected. When removed in the incipient stage, there is a great possibility of accomplishing a cure. It has been shown that many of the chronic or persistent infections of the lung are due to bronchial occlusions by tumors—only curable by surgery. Following is a discussion of the increasing frequency of carcinoma, a description of the means of its detection, and a presentation of a few of the cases seen in the Public Health Center Chest Clinic in Minneapolis.

#### Incidence

The incidence of primary neoplasms, particularly bronchogenic carcinoma, is increasing more rapidly than any other form of malignancy. Forty years ago carcinoma of the lung was rarely seen. Today carcinoma is one of the most frequent malignant lesions in man. In the ten years from 1938 to 1948, the number of fatalities from bronchogenic carcinoma in the United States increased 144 per cent—from 6,732 in 1938 to 16,450 in 1948. In this same period of time, the total cancer deaths from all types of cancer increased 31 per cent—149,214 in 1938 to 195,594 in 1948. From 1920 to 1948 the death rate from bronchogenic carcinoma per 100,000 population in the United States increased ten times—from 1.1 to 11.3 per cent. In 1950, the death rate from bronchogenic carcinoma in Minneapolis was 8.6 per cent. According to Doll and Hill, deaths from

cancer of the lung in England increased fifteen-fold from 1922 to 1947.

There has been considerable controversy concerning the cause of the increase in bronchogenic carcinoma, but no known cause has been definitely proven. According to Wynder, and Graham, excessive and prolonged cigarette smoking is an important factor in the genesis of bronchogenic carcinoma. They have found that in their 605 male patients with bronchogenic carcinoma, only 2.6 per cent did not smoke or smoked minimally, whereas over 96 per cent had smoked heavily for over twenty years. "In the controlled male population 14.6 per cent did not smoke and 73.7 per cent smoked moderately." Levin, Goldstein and Gerhardt also found that there were more smokers among cancer patients than in non-cancer patients and that the patients with bronchogenic cancer usually smoked cigarettes. It is my opinion that there is a positive correlation between carcinoma and smoking.

#### Diagnosis

Sputum examination for cancer is gaining popularity in many medical centers and hospitals as experience with the method is acquired. Expectorated specimens may be smeared while fresh and examined by the technique of Papanicolaou, or bronchial washings may be obtained, centrifuged and imbedded for staining with hematoxylin and eosin. In our experience sputum examination has been very unsatisfactory and has given us very little of value in the diagnosis of neoplasms.

The standard x-ray examination of the chest, while one of our most valuable aids in the detection of primary lung tumors, often fails to reveal the shadow of the tumor itself. Lateral views and often oblique projections will sometimes show abnormal shadows behind the heart or diaphragm. Even the evidence provided by radiographs may only indirectly point to the presence of a tumor, such as atelectasis of a lobe or lobule, interstitial pneumonitis and abscess, virus pneumonia, apparent tuberculosis or pleural fluid. Certainly, absence of a tumor shadow is insufficient evidence

upon which to rule out the existence of a tumor when symptoms or signs indicate the possibility of its presence. All too often an early carcinoma or other bronchial neoplasm is not recognized until the x-ray is repeated. When definite tumor shadows are seen on the x-ray film, it is impossible to identify with certainty the type of neoplasm present.

Carcinoma of the bronchus is the most frequently encountered primary tumor of the lung. Most of the other primary neoplasms will be revealed in the course of an attempt to prove or disprove the presence of carcinoma. The diagnosis of bronchogenic carcinoma is often rendered difficult because of an associated pulmonary infection. The clinical and x-ray pattern may be indistinguishable from tuberculosis, even as to cavity formation. Interstitial pneumonitis and abscesses often complicate the picture, and a diffuse, infiltrative type of carcinoma closely resembles fungus infections in its clinical and roentgenological manifestations. To further complicate the diagnosis, non-pathogenic monilia is found in the sputum as acid-fast forms of *bovis actinomycetes*. Bronchial carcinoma may appear to be a discrete, sharp and circumscribed intrapulmonary tumor which grows at an imperceptible rate and has the appearance of a benign tumor. Yet more of these circumscribed shadows are due to carcinoma than are due to adenomas, hematomas and all the rest of the less malignant tumors combined.

Fluoroscopy of the chest is valuable in showing evidence of obstructive tumors. It is also a means of detecting paralysis of one side of the diaphragm when it exhibits paradoxical motion as the patient inhales sharply—a sign which would indicate involvement of the phrenic nerve. Pleural fluid is readily detected. Bronchography is of value in demonstrating the presence of neoplasms in the bronchi, especially when they lie in a smaller bronchus beyond the visible range of bronchoscopy. Persistent filling defect on repeated examination must be viewed as strong evidence in favor of a primary lung tumor. Bronchoscopic examination of the patient suspected of having a primary neoplasm of the lung is absolutely indicated. A high proportion of lung tumors can be detected directly or indirectly by this means.

The total blood counts and differential white cell counts are apparently unaffected directly by primary neoplasm of the lung, and changes are often due to a pulmonary infection. Anemia

when present is usually of the secondary or hypochromic variety. The sedimentation rate is usually elevated in the presence of malignant tumors and its increase serves only to arouse suspicion of their presence. Insufficient data are available as yet to establish the place of serological tests for malignancy and the diagnosis of pulmonary neoplasms, especially since tuberculosis frequently produces a false positive result.

Extrapleural thoracotomy should be widely used in patients who present strong presumptive evidence of primary neoplasm of the lung but whose preliminary examination has failed to yield a positive diagnosis. It is used with the same degree of safety as is exploratory laparotomy. To wait to see what develops in a patient who offers suggestive evidence of a pulmonary neoplasm, is to let the opportunity for cure be forever lost. Even benign-appearing tumors should be explored promptly because many of them are actually malignant. Others have malignant potentialities; they may eventually produce bronchial occlusion with suppurative complications. Even those completely benign may assume a size sufficient to crowd contiguous and vital structures with ultimate death of the patient.

### Treatment

Until Graham, in 1933, performed the first successful pneumonectomy for a bronchogenic carcinoma, such a diagnosis was equivalent to a death sentence for the patient. The literature now contains an increasing number of patients reported to be alive five or more years after pneumonectomy for carcinoma of the bronchus. The mortality rate incidental to a total pneumonectomy has been reduced to a level comparable to that of an abdominal operation. According to Kinsella, the mortality rate from lobectomy is about 2 per cent, and from pneumonectomy somewhat higher because the general condition of the patient may be rather poor. Technical advantage in physiology, anesthesiology, blood banking, chemotherapy, antibiotic therapy and thoracic surgery has made invasion of the chest a safe and practical procedure.

The objectives of treatment of the patient with bronchogenic carcinoma are twofold. Primary consideration is, of course, complete eradication of the neoplasm. When examination indicates that carcinoma is confined to one lung or the regional lymph nodes, total pneumonectomy is the treatment of choice. The second consideration of

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treatment is that of palliation and amelioration of the various symptoms when a curative surgical procedure is impossible. As to the inoperable

select screening process because of the Mass City X-Ray Survey conducted that year. In 1951-52, the clinic assumed the responsibility of intense

TABLE I. CLINIC REPORT OVER FIVE-YEAR PERIOD

	7/1/47- 6/30/48	7/1/48- 6/30/49	7/1/49- 6/30/50	7/1/50- 6/30/51	7/1/51- 6/30/52	Total
Total Number Admitted to Clinic:						
1. Medical	5237	5001	5100	5281	5368	25987
2. Screening	8411	12050	12994	12566	11700	57721
X-Rays Taken	16004	22644	25590	39606	25641	129485
Medical Clinic Admissions by Diagnosis						
1. Tuberculosis	1838	2268	2210	2227	2260	10803
2. Negative	822	663	496	429	324	2724
3. Deferred	2534	2063	2376	2601	2687	12261
4. Possible Tumors	43	7	28	24	97	199

TABLE II. DISTRIBUTION OF CONFIRMED NEOPLASMS

Malignant Tumors	Total	Successful Surgery	Surgery— Inoperable	No Surgery
Carcinomas				
1. Primary Site Lung and Bronchus	27	4	7	16
2. Other Organs—Metastasis to Lungs	10			10
3. Metastasis—Primary Site Unspecified	4	1		3
Total Carcinomas	41	5	7	29
Sarcomas				
1. Hodgkins Disease	2		1	1
2. Metastatic Sarcoma	1			1
Total Sarcomas	3		1	2
Total Malignant Tumors	44	5	8	31

patient, it is important for the comfort and happiness of the patient to maintain as high a level of general health as possible. The use of nitrogen mustard has recently produced marked benefits in the reduction of pain and improvement of bronchial drainage.

Table I shows the clinic attendance and x-rays over a five-year period and the classification of patients attending the medical clinic.

Of the 25,987 patients attending the medical clinic in the five-year period, 10,803 (41.6 per cent) were diagnosed tuberculosis, 2,724 (10.5 per cent) were diagnosed negative, 199 (.8 per cent) were diagnosed probable tumors with further clinical studies indicated, and on 12,261 (47.1 per cent) the diagnosis was deferred.

There has been an increasing number of potential tumors found each year in the five-year period. In 1947-48, .8 per cent of the total medical clinic attendance were probable tumors; in 1948-49, .1 per cent; in 1949-50, .6 per cent; in 1950-51, (.5) per cent, and in 1951-52, 1.8 per cent.

The higher incidence in 1947-48 is probably explainable by the fact that there was a more

follow-up on all individuals with possible tumors, which fact would undoubtedly have some bearing on the markedly increased rate in that year.

In Table II, of the total malignant tumors found, forty-one (93.2 per cent) were carcinomas, and three (6.8 per cent) were sarcomas.

Twenty-seven (65.9 per cent) of the carcinomas had their primary site in the lungs or bronchi. Four (14.8 per cent) of this group have had successful operations, seven (25.9 per cent) had some form of surgery and were found to be inoperable, and sixteen (59.3 per cent) had no surgery and were in all probability, as far as we have been able to establish, inoperable.

Five (11.4 per cent) of the total group of malignant tumors had successful operations; eight (18.2 per cent) were found to be inoperable, and thirty-one (70.4 per cent) had no surgery.

There were no inoperable cases among the benign tumors (Table III). Thirteen (59.1 per cent) of the total number were successfully operated upon, and nine (40.9 per cent) had no surgery. Several of the lateral group have been scheduled for surgery, but it has not been com-

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pleted as yet. The greater percentage of benign tumors found and those on which a positive diagnosis was established by the pathologists' report

upon. On four of these eleven patients, surgery was successful and they have survived for a period of five to twenty-seven months, seven of the

TABLE III. DISTRIBUTION OF CONFIRMED NEOPLASMS

Benign Tumors	Total	Successful Surgery	Surgery—Inoperable	No Surgery
1. Fibroma, Visceral Pleura	1	1		
2. Granuloma	3	3		
3. Hematoma	1	1		
4. Neurofibroma	5	5		
5. Thymoma	1	1		
6. Tuberculoma	5	2		3
7. Tumor, Benign	3			3
8. Tumor, Metastatic				
9. Masses, Mediastinum	1			1
9. Tumor, Neurogenic	2			2
Total Benign Tumors	22	13		9

TABLE IV.

Cysts	Total	Successful Surgery	Surgery—Inoperable	No Surgery
1. Bronchogenic	3	3		
2. Benign, Pulmonary	2	2		
3. Anterior Colonic	1	1		
4. Dermoid	1	1		
5. Cystic Disease, Lung	2			2
6. Fibrous Cyst	1	1		
Total Cysts	10	8		2

following surgery were: granulomas (13.6 per cent) and neurofibromas (22.7 per cent).

Table IV indicates the types and distribution of lung cysts found. Eight (80 per cent) of these have had surgery. On two (20 per cent) surgery is not indicated at the present time.

## Conclusions

The incidence of primary neoplasms of the lung, particularly bronchogenic carcinoma, is increasing more rapidly than any other form of malignancy. Forty years ago, carcinoma of the lung was rarely seen. Today carcinoma is one of the most frequent malignant diseases in man.

The experience with pulmonary tumors at the Minneapolis Public Health Center is presented. During the period from July 1, 1947, to July 1, 1952, 83,708 individuals were seen in the x-ray clinic: of these individuals 25,987 were seen in the Medical Clinic. One hundred ninety-nine possible lung tumors were studied. Representative case histories of these groups are given. Of the twenty-seven patients in the malignant group (primary in the lung), eleven had been operated

patients operated on (three were biopsies) were found to be inoperable. One of these patients is still living and has been for approximately eight months. Of the twenty-two in the benign group, thirteen patients were operated upon and have survived for a period of seven to sixty months.

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## THE CLINICAL DIAGNOSIS OF SOME BULLOUS DERMATOSES

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**F**EW dermatologic problems are as complex as those concerning the bullous dermatoses. Differences of opinion concerning these diseases are numerous, and the confusion is considerable. There are a large number of synonyms in the nomenclature, and the numerous proper names assigned to these disorders help in no way to understand their pathogenesis. Even now there is debate as to the identity of dermatitis herpetiformis and pemphigus.

### Dermatitis Herpetiformis and Pemphigus

Morphology is undoubtedly an important aid in the differentiation of dermatitis herpetiformis and pemphigus. Before Duhring<sup>3</sup> described dermatitis herpetiformis there was general agreement that various types of lesions occurred in pemphigus. Now, if various types of lesions occur, a diagnosis of dermatitis herpetiformis is usually made. The axiom that vesicles or bullae which occur on an intact skin signify pemphigus, and that such lesions on reddened skin signify dermatitis herpetiformis, is an old one. Vesicles or bullae can form on erythematous skin, but the redness may quickly disappear. Conversely, lesions can appear on intact skin and soon be surrounded by a red halo, so it is not possible to be certain about the condition of the skin when the blister developed. Such an unreliable sign can never be used to differentiate dermatitis herpetiformis from pemphigus. Polymorphism has been stressed in dermatitis herpetiformis. It occurs, however, in many cases of pemphigus.

Grouping of lesions is prominent in dermatitis herpetiformis, but is frequently found in pemphigus. In pemphigus vegetans there may be definite grouping. A multiform eruption which doesn't have features of outspoken pemphigus vegetans or foliaceus, plus vesicular, herpetic lesions and early pigmentation is an important group of findings pointing to a diagnosis of dermatitis herpetiformis.

Mucosal involvement is well recognized in pemphigus. Mucosal lesions in dermatitis herpeti-

formis are extremely rare and offer no important differential point as far as their clinical appearance is concerned. Pure morphologic analysis often does not permit a differentiation between these dermatoses.

Nikolski's sign, which was first described at the Fifth Congress of Russian Physicians in 1894, is not constant but is seen often in pemphigus. It has been observed most frequently in the progressive stages but is not a particularly ominous sign. In most cases of dermatitis herpetiformis Nikolski's sign is absent. Most observers, however, believe that it may be positive in dermatitis herpetiformis, which again emphasizes the insufficiency of our differential diagnostic aids.

Pruritus and other paresthesias are far more prominent symptoms in dermatitis herpetiformis than pemphigus. These must be regarded as a part of the sum-total of various signs and symptoms and cannot be depended upon alone for differential diagnosis.

Eosinophilia in the blood and bullae is frequent in dermatitis herpetiformis but may be found in pemphigus. Many authors feel that this is no differential point at all. Eosinophils have been found as high as 74 per cent in the blood of patients with pemphigus.

For a long time it was believed that sensitivity to halogens was an almost pathognomonic sign of dermatitis herpetiformis and was lacking in pemphigus. Patients, however, in whom dermatitis herpetiformis was originally diagnosed and who presented a positive reaction to potassium iodide, have been known to die with obvious pemphigus several years later.

Undoubtedly, sulfapyridine is the most effective drug in the treatment of dermatitis herpetiformis. In 1947 Costello<sup>1</sup> sent a questionnaire to 100 dermatologists throughout the country, and those who had experience with the drug in this disease stated that 80 per cent of the patients improved to the extent that they were free of symptoms. Twelve per cent of the physicians reported patients who were cured with this form of treatment. In most cases the favorable response is prompt and dramatic. In contrast, sulfapyridine produces only slight or transient improvement in pemphigus.

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While not an infallible method, the therapeutic test with sulfapyridine is the best single means which we have to differentiate dermatitis herpetiformis from pemphigus.

The course is an important factor in the differential diagnosis of the two diseases. Periodicity and heteromorphism speak for dermatitis herpetiformis, while uniformity and homogeneity of bullous outbreaks, plus monotony, favor a diagnosis of pemphigus. It is not acceptable to consider chronic pemphigus as purely bullous since there may be considerable variation as to types of lesions. Pemphigus may start as a vesicular eruption with the later development of bullae. Urticarial wheals and erythematous blotches are frequently seen in dermatitis herpetiformis, but the idea that such lesions are never present in pemphigus is not tenable. Erythema multiforme-like lesions may occur in both disorders.

The long duration with relatively slight disturbance of the general health favors a diagnosis of dermatitis herpetiformis. Not all cases of pemphigus, however, have serious disturbances of the general health until years after the onset. In dermatitis herpetiformis, too, there may be constitutional symptoms, but a favorable course with a non-lethal ending is the rule.

In the light of our imperfect knowledge, it may be summarized that dermatitis herpetiformis is a chronic, inflammatory, exudative dermatosis, an important clinical peculiarity of which lies in the maintenance of good general health, variable burning and pruritus, periodic outbreaks, and a non-fatal outcome. From the clinical standpoint dermatitis herpetiformis is characterized by wheals, papules, vesicles, and rarely pustules. Bullae occur only exceptionally through the confluence of smaller lesions. Scales, erosions, crusts, and spotty pigmentation are important secondary lesions. Another noteworthy sign is the grouping over the shoulders, axillas, sacral regions, flexor surfaces of the upper portions of the arms, and the inner portions of the thighs and legs. Sometimes lesions occur on the dorsal surfaces of the feet, infrequently on the scalp, and rarely, if ever, on the mucous membranes. The groups are of variable size, and depending upon the duration of the disease, show both primary and secondary lesions. Nikolski's sign is rarely, if ever, present. Thus the designation dermatitis herpetiformis should be used only for a well-defined chronic, pruriginous,

inflammatory-exudative dermatosis with a favorable prognosis and *only* for such a circumscribed symptom-complex.

### Herpes Gestationis

This was described as early as 1875 by Milton<sup>7</sup> in England, and later by Duhring<sup>4</sup> in America. It may occur at any time during pregnancy but usually after the fifth month or during the early postpartum period.

Grouped vesicles and bullae on an erythematous base are the common lesions, first appearing on the abdomen and accompanied by burning and itching. The groins, breasts, and extensor surfaces of the extremities may become involved. Later the eruption may become generalized. The mucous membranes are said to be free in most cases. The disease is prone to recur in succeeding pregnancies. Although some authors have reported recurrences only when the infant was a boy, most observers believe this is not true. Miscarriages, stillbirths, and monstrosities have been reported to occur in patients who had herpes gestationis.

Herpes gestationis is likely to occur earlier and be more severe in subsequent pregnancies. Like ordinary dermatitis herpetiformis, eosinophilia, ranging from 28 to 50 per cent, has been reported in this disorder. The prognosis is usually good. Duhring and other authors stated that herpes gestationis resembles ordinary dermatitis herpetiformis in every respect except the cause (pregnancy). Deaths, however, have been reported in this disease.

### Dermatitis Herpetiformis in Children

It should be strongly emphasized that this disorder is extremely rare in children. The lesions tend to be more purely vesicular or bullous with a generalized distribution, and the grouping, which is so characteristic for adults, is usually lacking. The intense paresthesias which characterize the disease in the adult are as a rule less intense, and pigmentation is not a noteworthy feature.

### Impetigo Herpetiformis

This is a rare and confusing disorder. The eruption consists of vesicopustules from 1 to 3 mm. in diameter which are discrete in the beginning but soon coalesce to form oozing, crusted foul-smelling lesions surrounded by a dull zone of erythema. Lesions spread peripherally by forma-

tion of new pustules leaving reddened, shiny, apparently healed areas.

Lesions of the mucous membranes, especially of the mouth, are present. These consist of grayish white plaques bordered by detached necrotic mucous membrane. They are painful and interfere with mastication and deglutition. In this stage their appearance simulates pemphigus vulgaris.

The disorder most frequently begins in the genitocrural regions where large denuded, crusted, soggy, erythematous patches are encountered. The lower part of trunk and lower extremities may be affected. Rarely the eruption is generalized.

The symptoms are severe, consisting of fever, rapid pulse, vomiting, diarrhea, bone and joint pains, and great prostration. Anorexia, severe pruritus, and insomnia lead to rapid loss of strength and weight.

Bacteriologic examination of the blood and lesions fails to show a causative organism. The cause is unknown. The occasional manifestation of convulsions suggests pathology of the endocrines, especially the parathyroid glands.

The disease usually occurs late during pregnancy or during the puerperal period. Spontaneous abortion has been followed by recovery. Cases in non-pregnant women and even males have been reported. The relationship to dermatitis herpetiformis and pemphigus is not clear. Fletcher Hall,<sup>5</sup> in 1944, reported a case in a male, in which a remission was obtained after treatment with sulfapyridine. His patient did not die. Henry Michelson<sup>6</sup> recently had a case of impetigo herpetiformis in which there was an extremely favorable response to sulfapyridine, suggesting that the disease may be closely aligned with dermatitis herpetiformis. The prognosis is grave, since the maternal mortality is between 70 and 80 per cent.

#### **Pemphigoid Erythema Multiforme**

Ordinary erythema multiforme of the so-called Hebra type will not be considered in this discussion. Cases of erythema multiforme are occasionally seen which closely resemble pemphigus. This is the type which Costello has called erythema multiforme pemphigoides. The term has also been used to describe severe bullous eruptions which sometimes follow smallpox vaccination or the ingestion of certain drugs. It is probably preferable, however, to reserve the term for cases for which there is no known cause. Costello and Vandow<sup>2</sup> studied a group of 150 cases of erythema

multiforme which occurred over a twelve-year period. About 7 per cent of the entire group fell into the severe bullous type.

In most cases the disease begins on the skin. Occasionally, lesions in the mouth develop a few days before the skin becomes affected. Fever usually is present from the onset.

The eruption is made up of vesicles and bullae surrounded by an erythematous halo. They usually rupture early and become crusted. Grouped iris lesions are frequently present. In most instances the disease was symmetric and extensive. The face, dorsal surfaces of the hands and forearms, neck, trunk, and lower extremities are most frequently involved. Severe itching and burning are common. Ruptured bullae, irregular areas of erythema, and erosions of the soft palate, tongue, cheeks, and pharynx are commonly observed in the mouth. There is crusting and fissuring of the lips, mild conjunctivitis, and lesions of the vulva. Recurrences are rather common, as in ordinary erythema multiforme.

The symptoms are less intense than in other types of erythema multiforme. Loss of weight, strength, and appetite are unusual. In most cases fever from 102 to 104 degrees F. persists from two to six weeks. As a rule, it is more prolonged than in the ordinary type of erythema multiforme. In the blood the leukocyte count is slightly increased and there is occasional eosinophilia. Secondary anemia is frequent.

According to various writers the differentiation of pemphigoid erythema multiforme from certain cases of pemphigus is difficult and in some cases almost impossible. An extremely rapidly appearing pemphigoid eruption with generalized distribution suggests erythema multiforme pemphigoides rather than pemphigus vulgaris, which as a rule becomes generalized only after a period of several weeks or months.

#### **The Stevens-Johnson Type of Erythema Multiforme**

There have been numerous papers dealing with a rare clinical syndrome characterized by abrupt onset with symptoms suggesting an acute respiratory infection with marked prostration and elevation of temperature and accompanied by the simultaneous development of edematous areas of erythema of the skin and vesicobullous lesions of the mucous membranes. Within a few days the lesions rupture, producing extensive bright red

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areas of denudation especially around the mouth, eyes, nose, anus, and genitals. Severe conjunctivitis is usually present. The eyelids may be stuck together by crusted, greenish exudate and erosions. Ulceration and scarring on the cornea may result in partial or complete loss of vision. The disease usually runs a fulminating course for about two weeks when the temperature finally falls. In several series the mortality rate has run about twenty per cent. Some of the patients develop a generalized vesicobullous eruption. Slight leukocytosis (10,000 to 15,000) is usually present. Anemia is unusual. Patients who have the Stevens-Johnson type of erythema multiforme occasionally develop pneumonia. Secondary infection of the bullae may occur. Hyperpigmentation frequently remains after the lesions heal. The average age in Costello's series was twenty-six years although the disease may occur in children. It seems to be more common in the winter and spring and is more frequently seen in males.

### Summary

1. The bullous diseases frequently present an extremely difficult diagnostic problem.

2. The greatest confusion exists in attempting to differentiate certain cases of dermatitis herpetiformis from pemphigus.

3. The various diagnostic aids, including morphology, hematologic findings, sensitivity to halogens, response to treatment and course are not infallible.

4. The favorable response of dermatitis herpetiformis to sulfapyridine and the lack of response of pemphigus is probably the best single means of differentiation between the two diseases.

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## BIRTH RATE INCREASES

According to the Public Health Service the national birth total continued to rise during the first three months of 1953, after setting a new annual record of 3,889,000 registered and unregistered births in 1952.

Births during the first quarter of 1953 were running about 29,000 ahead of the same period last year, an increase of 3 per cent. March was the tenth consecutive month in which the estimated total births topped corresponding monthly figures for the previous year.

The level of births for the first three months is at an annual rate of twenty-five live births per 1,000 population. This is slightly higher than the birth rate for the first quarter of 1952.

Since the end of World War II, more children have been born every year than in any wartime or prewar year. From 2,858,000 of registered and unregistered live births estimated for 1945, the total soared to 3,817,000 in 1947. After dropping to a slightly lower level

for the next three years, birth totals reached a new high in 1951 and broke the record again in 1952.

Based on registered births alone, 58,000 more couples had a first child in 1951 than in 1950, according to preliminary estimates. This 5 per cent increase in first-born children was largely a sequel to the marriage upswing that began in June, 1950, at the start of the Korean War. Births of second-born children increased by 2 per cent over 1950.

Births of third children increased by 9 per cent, and of fourth children by 13 per cent. These increases continue a steady rise that has been going on since the end of World War II.

Marriages dropped in the last half of 1951, so it is likely that fewer couples had their first child in 1952 than the previous year. But since total births went up, it probably meant a further rise in the births of second-born or later children during 1952.

## DERMO-FUNGOUS ALLERGY

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THIS DISCUSSION is limited to the allergic manifestations of the superficial fungous infections. The study of the immunologic mechanisms in fungous disease closely parallels the allergic processes in tuberculosis. Bloch and Jadassohn and their followers studied extensively the biologic and allergic phenomena in fungous infections and contributed much of the original work in this field, much as Koch and his school in tuberculosis. Experimental studies have been done principally in infections in guinea pigs produced by the species *Trichophyton gypsum*. It has been shown that the hypersensitivity develops only during the course of an infection and the peak of hypersensitivity is reached some two to three weeks after the lesions are healed and gradually decreases over a period of months after the infection. Primary infections in the guinea pig run their course in three or four weeks with the peak of intensity about the twelfth day. In reinoculations the response is accelerated being most intense within six days and completely healed in ten or twelve days.<sup>3</sup> Similar experiments in man resemble those in the guinea pig as far as the difference between first inoculations and reinoculations are concerned except in man the course of events is less constant and regular. Once an individual has recovered from a fungous disease the entire skin surface including the clinically unaffected areas acquire a state of specifically altered reactivity as evidenced by the more rapid and less severe reaction to reinfection. The evolution, configuration, and involution of the mycotic foci are dependent upon the immunologic state of the skin. When the allergy is strongly developed, the fungi may be destroyed directly; when it is of lower degree, it serves only to inhibit the multiplication of the fungi so that they can again multiply as soon as the immunity retrogresses.

As a rule, allergic hypersensitiveness of the

skin is encountered in the deep inflammatory mycoses, though it may develop in superficial mycoses provided they are of long standing. Also the degree of allergy depends in part on the species of fungus, animal species of fungi being more likely to sensitize than the human variety.

A high degree of allergy is manifested by patients with dermatophytids. The term "id" is understood to designate the reaction of a highly allergic skin to a hematogenously distributed organism or its products.

The altered reactivity of the skin can be demonstrated by means of the trichophytin skin test. Trichophytin is prepared from cultures of trichophytons or immunologically related fungi such as epidermophytons and microsporons. An established positive trichophytin reaction appears almost exclusively in susceptible humans or animals who have been infected or otherwise adequately exposed to the specific agents or their products. Trichophytin sensitivity can persist long after the disease process is healed.

The degree of skin sensitivity to trichophytin can be deliberately altered by repeated intracutaneous injections of the specific extract. Reactions to the trichophytin skin test are of very limited diagnostic value. The reaction to trichophytin indicates only that an adequate specific exposure has taken place at some time in the past and does not necessarily mean that an individual is suffering from active trichophytic disease. It is sometimes of value in special problems of differential diagnosis. The usual twenty-four to forty-eight hour papular tuberculin-type reaction is elicited by the intracutaneous injection of .1 cc. of 1:30 to 1:50 dilution of a standard trichophytin. The test is read at twenty-four, forty-eight, and seventy-two hours. Inflammatory erythema and infiltration appear at twenty-four to forty-eight hours and usually persist for two to four or more days and may persist up to several weeks. Persistent reactions may become eczematous, lichenified and scaly. The reaction (1 to 3 cm.) should be considered positive only if the reaction at the trichophytin site is significantly greater than the reaction at the con-

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trol site. A negative reaction indicates that the individual has never had a sensitizing infection with trichophyton or immunologically related fungi or that the individual has been exposed but is in a state of anergy; also it may be that the individual has been exposed to fungi but is still in the incubation period of the infection.

The significance of the urticarial skin test responses to trichophytin is unknown. It is much less common than the tuberculin-type response. The urticarial reaction is read and evaluated fifteen to twenty minutes after the intracutaneous injection of 0.01 to 0.02 cc. of trichophytin. A control test should also be done. Some of the patients showing immediate urticarial responses to trichophytin have circulating passive transfer antibodies of the Prausnitz-Kustner type. The early response may be of occasional diagnostic value owing to the fact that most of the early responses have been found in: (1) chronic *Trichophyton purpureum* infections; (2) recurrent erysipelas-like involvement of the legs presumably due to fungi<sup>4</sup>; (3) asthma, rhinitis, urticarias presumably due to products of dermatophytes.

Many of the mycotic infections present features which are instructive from the point of view of allergy. Dermatologists have been able to study the effects of allergy on the primary lesions of fungous infections much more intensively than internists can study the relationship between allergy and primary tuberculosis. This is true because in fungous diseases the skin and its appendages are the organs of first infection in most cases and the development and course of the primary lesion and changes in skin allergy are all constantly accessible to observation and investigation.

It has been found that the production of trichophytin sensitivity in a fungus-infected individual as well as the character and course of the disease depend to a great extent upon the species of the infecting fungus. There is a tendency for certain fungi to be more common in animals (zoophilic) and for others to be more common in man (anthropophilic). When zoophilic fungi affect man they generally produce higher degrees of trichophytin sensitivity, greater degrees of inflammation, and a higher incidence of dermatophytids than do the anthropophilic fungi. Also the tissues of the human host have greater degrees

of resistance as shown by a lesser degree of infectiousness and greater tendency to spontaneous healing and better response to various forms of therapy. Thus can be demonstrated the common close association between the production of allergic sensitivity and the increase in capacity to overcome infection.

It has been experimentally demonstrated that the local variations in the grade of hypersensitiveness may explain the commonly observed corymbiform or iris-shaped lesions.<sup>1</sup> The refractory free zones that appear in or about healed foci may be regarded as an expression of local immunity which is responsible for spontaneous healing of skin diseases.

The diagnosis of the classic forms of dermatophytids is usually simple and direct. In many cases as in ringworm of the scalp or beard there is a clear sequence of exposure, primary infection, development of allergy, appearance of primary lesions and eruption of the "id." Experimental studies by Williams and Peck have shown that certain eczematous eruptions on the hands are dermatophytids secondary to fungus foci in the skin on the feet, toes and possibly toenails.<sup>2,5</sup> The usual sites on the hands are the sides of the fingers and the palms. The lesions are usually vesicular, simulating dysidrosis. The reason for this localization is unknown but factors considered have been terminal circulation of the hands, contact with fungi producing local sensitization, traumatic factors and sensitization to light. In the classic dermatophytid following a deep infection of the hair follicles, the trunk is usually involved with follicular localization of lichenoid papules and occasionally eruptions simulating a toxic erythema. Constitutional symptoms such as fever, chills, lymphadenitis secondary to kerion are not commonly part of the complex which includes an eruption secondary to tinea pedis. The diagnosis of dermatophytid has been used very glibly in this country without careful observation and study of hand eruptions. Peck has laid down definite criteria. One dictum that a positive blood culture is essential is rather drastic. The following conditions for diagnosis of a dermatophytid are minimal but necessary.

1. There must be a demonstrable focus that contains pathogenic fungi.
2. The intracutaneous trichophytin test gives a positive reaction.

3. Fungi are usually not found in the lesions of the dermatophytid.

4. The secondary rash may be due to irritation of the primary focus by treatment or to a spontaneous inflammatory change. The injection of trichophytin for diagnosis may cause the development of a generalized dermatophytid eruption. The dermatophytid usually disappears spontaneously when the focus has been eradicated. Exceptions to this occur when there are secondary eczematous changes and the rash continues because of sensitivity to other substances or because of the action of primary irritants.

The condition known as keratolysis exfoliativa is often considered as a form of dermatophytid. Here the lesions consist of superficial scaly macules which may coalesce and are localized to the palms or soles. The lesions are at first unruptured empty vesicles.

Fungous infections also play a contributory role in the production of the hypersensitivity to other agents such as drugs and chemicals. Fungous infections can pave the way for a subsequent contact dermatitis because the continuity of the skin is interrupted by the infection thereby permitting the entry of secondary sensitizing substances.

In many cases, the clinical pictures of vesicular, eczematous and scaling dermatophytids of the hands cannot be distinguished from similar eruptions of the hands due to other causes. Even though some of the aforementioned criteria for an "id" eruption prevail, we may have these same findings when hand eruptions are not fungous "ids," but are contact-type eczematoid dermatitis or some other form of eczematous dermatitis. It has been shown that a clearcut contact dermatitis of the feet may be followed by a secondary eczematoid eruption of the hands and the reverse also holds true i.e., a hand eruption followed by secondary changes on the feet. The diagnosis of eczematous dermatophytid of the hands is no doubt being overworked, but there is also no doubt that many eczematous eruptions of the hands will not clear up until fungus foci elsewhere have been adequately treated.

When a fungus focus is found to be the cause of a secondary eruption, the secondary eczematous lesions usually require local antieczematous treatment as used in the treatment of eczema.

To understand the rationale and objectives of

treatment, it must be remembered that these fungi do not elaborate any toxin or primarily harmful substance. But it has been shown that fungi produce lesions on the skin because they and their products sensitize the skin both locally and generally. So as far as can be determined, fungi elaborate not toxins but allergens. These fungous allergens often produce an eczematous form of skin hypersensitivity. These organisms multiply in and on dead tissue; hence, they are found in abundance in the dead horny layers of the skin and in the dead macerated or dried debris and scales in and around the hairs and nails.

Infections with monilias produce a skin sensitization to oidiomycin and not to trichophytin. It is probable that trichophytins and perhaps other pathogenic fungi have antigens in common with those contained in penicillin. This may account for vesicular and other reactions resembling fungous eruptions which are commonly seen on hands, groin, et cetera, following penicillin administrations.

Hyposensitization with trichophytin is generally of little value in the treatment of superficial fungous infections and "ids." Trichophytin desensitization is always tedious and like all other immunologic therapy involves the dangers of occasional increased sensitivity, focal flare-ups, exacerbation and extension. This procedure is not advisable as a routine therapeutic measure in ordinary or mild cases. However, in severe recalcitrant cases with full recognition of the relatively slim chance of success the measure warrants careful trial. It is sometimes followed by improvement or even cure when all other attempts have failed. Intracutaneous injections of trichophytin or oidiomycin beginning very carefully with doses below those which produce strong local reactions constitute the usual method.

Both the primary fungous eruptions and the secondary fungous eruptions known as dermatophytids are considered to be allergic manifestations essentially based on specific sensitization of the skin to fungous products. The fungous eruptions are, in general, eczematous. In most instances, they are similar in their pathogenic mechanism to the allergic eczematous dermatoses produced by contact with exogenous eczematogenous allergens. Treatment should be directed at the specific fungous focus and at the eczematous eruption.

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## INFECTIONS OF THE URINARY TRACT

### Helpful Hints on Management

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**T**HE TREATMENT of infections of the urinary tract has been of great interest and practical importance for many years. The armamentarium of drugs for management of these infections is vastly different from that of years ago. Nevertheless, in our experience in Rochester, the problem is still a most difficult one at times.

Before going into a detailed discussion of the various chemotherapeutic and antibiotic compounds which are at the disposal of the physician today, it becomes necessary again to review a number of basic concepts concerning the management of these infections. Without this fundamental knowledge the most sincere efforts may amount to naught. Too frequently, better judgment is abandoned in the face of exorbitant claims made by enthusiastic physicians and, more particularly, by some manufacturers. I would in no way detract from the ethical efforts of scientifically minded manufacturers; man in general owes them great thanks for what they have contributed in research concerning synthesis of the new compounds. Nevertheless, it is imperative that certain important facts which have been known throughout the entire field of medicine for years be kept in mind. Certain underlying concepts are necessary precursors of any treatment.

Many years ago I remarked that the story of infections of the urinary tract was a simple story and should be told in a simple way. Today there are a few more complicating factors to reckon with but the fundamental thought is the same, particularly if attention is given to certain basic principles of the art of diagnosis. First to consider is the value of the history obtained from the patient. Frequent urination, burning on urination and urgency are the cardinal symptoms of all infections of the urinary tract, be they primary or secondary. To treat these symptoms with drugs to relieve acute difficulty is justifiable but beyond this such treatment is willful neglect. This triad of symptoms may represent urethritis in the female, prostatitis and posterior urethritis in the male, stricture, or even interstitial cystitis. At this point it will not be superfluous to urge again care-

ful evaluation of the history. When this analysis is studied in conjunction with the findings noted on examination of a properly obtained specimen of urine, the physician then, and then only, is ready to outline the management. If the foregoing are correctly done, ordinary judgment usually will dictate the needed additional diagnostic procedures and the required treatment.

If a female complains of burning and frequent urination but results of examination of urine are completely negative, the physician immediately should think of chronic urethritis; if she complains of urgency, the physician should consider trigonitis or cysts of the vesical neck; if the complaint is of the combination of frequency, nocturia and pain when the bladder is full, but the patient says these are relieved by voiding, the physician should call to mind interstitial cystitis. Too often, in the presence of such symptoms, treatment is by means of numerous new chemotherapeutic and antibiotic compounds, the only benefit of which accrues to the manufacturers of the drugs. Careful evaluation of subjective and objective findings in such cases certainly would lead to proper management.

A discussion of this sort naturally will raise the problem in the mind of the general practitioner, and at times in the mind of the urologist, as to how far one should go in treatment without complete urologic study. Certainly it would not be wise to submit everyone to complete urologic examination because of certain symptoms which suggest infection. However, if certain facts in the history or physical examination indicate the possibility of a coexisting pathologic process, these facts must be recognized and must govern the procedure. Infections of the urinary tract are secondary as often as they are primary and the physician must ever be cognizant of this. Not only is this important from the angle of diagnosis but, more particularly, from the angle of treatment.

Naturally, the type and site of the infection must be ascertained. That proper examination must be made of a properly obtained specimen of urine goes without saying. The specimen must be obtained by catheter from a female or it must be a second-glass specimen if the patient is a male.

From the Section of Urology, Mayo Clinic.

It should be examined grossly, then microscopically under the high dry objective, and finally the sediment should be stained with Gram's stain to ascertain the presence or absence of microorganisms. Culture of the urine is helpful but by no means necessary to good management in the majority of instances.

With the above information at hand, the presence of infection established, and the causative organism known, it would be ideal if there were available a "drug for a bug." However, such a utopian elixir does not obtain and the quicker this is realized the better off everyone concerned will be. There are many reasons why there is no specific against a particular microorganism. First, there is much difference in the sensitivity of the various strains of any organism to any particular medication. Second, but of less importance, is the individual's ability to take the drug and excrete it in the urine. Third, there must exist varying resistance of the different organisms to one or another of the many chemotherapeutic compounds after a period of administration of the drug. This is particularly true of the staphylococci. Consequently, qualification is necessary when statements are made concerning the proper drug to use in management of infections with certain organisms.

In general, the organisms found can be divided into two great groups: the Gram-negative bacilli and the Gram-positive cocci. The former are represented by *Escherichia coli*, *Aerobacter aerogenes*, bacteria of the genus *Proteus*, and the *Pseudomonas* organisms. Representatives of the latter are the staphylococci, the *Streptococcus faecalis*, and the hemolytic streptococci. As mentioned previously, there is no "drug for a bug." Consequently, each preparation will be named with a view to listing the organisms usually eradicated by its administration.

#### Preparations for Administration

**Sulfonamide.**—My experience with this drug indicates that in any of its many forms it is the most nearly universal urinary antiseptic. It is cheap; it can be given in small doses with few, if any, toxic reactions. Certainly it is effective against the majority of the usually encountered Gram-negative bacilli but not against the *Pseudomonas* organisms. It is equally effective against staphylococci and streptococci but has little or no effect on the growth of *Streptococcus faecalis*. It is given orally and, in my experience, a dose of

2.0 gm. daily for a week is sufficient. This drug also is of value when intermittent medication may be desired. A course of medication given for five to seven days of each month for three or four months may be of great value in eliminating a recurring infection.

**Penicillin.**—This preparation is most useful, when given either alone or in combination with the sulfonamides or streptomycin. Its efficacy seems to be decreased when used with aureomycin or terramycin. The dose is 300,000 to 600,000 units given daily, intramuscularly. It has been of value in treating the usual bacillary infections but not those caused by the *Pseudomonas* and also has been worthwhile against most coccal infections, at times even against the *Streptococcus faecalis*.

The experience with penicillin furnishes an example of why dogmatic statements of efficacy of any substance are unwise. In the first few years following the development of penicillin, most organisms of the genus *Staphylococcus* were completely eradicated by administration of this drug. At present, in our clinic, almost 50 per cent of the staphylococci found are not sensitive to penicillin, either experimentally or clinically. Toxic manifestations are minimal but rather severe skin reactions do occur at times. I do not believe that penicillin is a drug to be given promiscuously.

**Aureomycin and Terramycin.**—These two antibiotics will be considered together because their action is much the same. The drugs are given orally in divided doses, 250 mg. every six hours. They are particularly of value in treating infections with *Streptococcus faecalis* and *Aerobacter aerogenes*. Infections attributable to the *Proteus* or *Pseudomonas* organisms are rarely affected. Symptoms of toxemia after administration of these substances are similar but they are more severe and of more common occurrence following use of aureomycin than terramycin. Nausea and vomiting, and more frequently diarrhea, may be troublesome.

At times, following sterilization of the bowel with these drugs as a preoperative measure, severe, fulminating staphylococcal pseudomembranous colitis has developed. While this complication is not of common occurrence, its possibility must be borne in mind.

*Chloromycetin*.—This drug was briefly my personal choice among all the antibiotics, and from certain standpoints it still is, except that it must be appreciated that a severe toxic reaction has developed in a small percentage of cases. The aplastic anemia to which I refer has developed in some cases after a relatively small dose has been given for only a short time. Other toxic manifestations are nil. The quantity to be administered is 1.0 gm. daily, given in divided doses for five to seven days. However, I believe it should not be used unless studies of sensitivity reveal that the offending organism is sensitive to it alone and the patient is seriously ill.

*Polymyxin*.—My experience with this antibiotic is extremely limited. Nephrotoxic and neurotoxic symptoms are of such degree that I believe its use is justified only in serious situations where studies of sensitivity show that it alone is of value.

*Neomycin*.—This is another antibiotic which is toxic at times. It causes certain disturbances of the middle ear similar to those encountered following use of streptomycin. Its use is indicated only if studies of sensitivity show it to be the only drug to which the infecting organism is sensitive.

*Erythromycin*.—This is well tolerated in most cases. Certain limitations to its use must be appreciated. It is of value only in treating infections with Gram-positive organisms. It has shown no effect on urinary Gram-negative bacilli.

*Streptomycin*.—A few years ago I was strongly of the opinion that this preparation was of little importance in the field here concerned, with the exception of cases of infection with organisms of the genus *Proteus*. When the drug was administered to patients suffering from such an infection, and the treatment was supplemented by administration of sulfonamides, the results were good. The poor results against the usual bacillary invaders, coupled with the not infrequent manifestations of toxicity relative to the middle ear, made me hesitant to prescribe the drug. With the advent of dihydrostreptomycin such toxic side effects became minimal; an additional favorable feature is that time of administration is short. Resistance of the infecting organisms to the preparation seems to build up rapidly. This fact should be appreciated in planning dosage; conse-

quently I advise 2.0 gm. daily for two days, followed by 1.0 gm. daily for an additional three or four days.

*Mandelic Acid*.—Availability of the foregoing preparations should not cause abandonment of an old standby. When renal function is normal, mandelic acid can be given with few toxic reactions, and no danger. This drug holds an important place in the treatment of many bacillary infections and also in treatment of infection with the *Streptococcus faecalis*.

*Arsenic for Intravenous Injection*.—Through the ages, progress has left many worthwhile things by the wayside. In years past, many coccal infections responded well to intravenous administration of arsenic. I have given oxophenarsine hydrochloride (mapharsen), 0.03 to 0.04 gm, intravenously, four or five days apart for three injections. The results often are startling.

*Chemotherapeutic and Antibiotic Preparations in Combination*.—Before leaving the subject of the immediately preceding paragraphs, I should like to mention the increased benefit which at times obtains when these preparations are used in combination. There seems to be a synergistic relationship between the sulfonamides on the one hand and either penicillin or streptomycin on the other hand; also penicillin and streptomycin seem to act synergistically. However, it has been definitely shown that penicillin in combination with aureomycin or terramycin definitely decreases the activity of both drugs of the combination.

### Local Treatment

Too frequently, because of the ease of prescribing one of the foregoing compounds, the value of properly administered local treatment has been forgotten. Lavage of the bladder with potassium permanganate, boric acid, or acetic acid, followed by instillation of ½ ounce (15 cc.) of 5 per cent solution of mild silver protein (argyrol) may give quick relief of acute symptoms. At times, continuous lavage with solutions of silver nitrate of increasing strength is of great value in treatment of incrustated cystitis. Here, too, cystoscopy under anesthesia and removal of the incrustations with the heel of the scope or blunt forceps, will hasten recovery. For the extremely irritable

bladder, instillations of silver iodide may be of help.

#### Clinical Entities

*Chronic Urethritis.*—This troublesome condition is of most common occurrence among females. The urethritis may be granular and there may or may not be cicatricial change. Instillation of a 5 per cent solution of mild silver protein (argyrol) once daily for five or six days, with adequate dilatation to size 32 or 34 French if indicated, is most helpful. Warm sitz baths are useful adjuncts in treatment. Rarely is fulguration indicated and overtreatment must be guarded against.

*Chronic Prostatitis.*—How much should be done for this condition? First of all, I am certain it rarely causes trouble to elderly men. If a patient is less than thirty-five or forty years of age, I advise regular massage twice weekly for eight to ten weeks, after it has been ascertained that there are no contributing foci in teeth or tonsils. If a patient is more than forty years of age, I usually advise against local treatment unless there are associated symptoms such as burning on urination, dysuria, frequency, or distress in the suprapubic region or groin. Perineal pain and testicular distress are not attributable to chronic prostatitis.

*Interstitial Cystitis.*—This miserable condition often requires the most careful handling. Overdistention of the bladder under anesthesia and instillation of solution of silver nitrate have proved helpful. Fulguration of the inflamed por-

tions occasionally has been beneficial. Cortisone and alpha-tocopherol have been given orally with varying results.

*Amicrobial Pyuria.*—This rare but interesting clinical entity usually is attended with most severe symptoms. There is a high degree of pyuria but the urine is free of any known organisms. In the course of differential diagnosis, tuberculosis of the urinary tract always must be excluded. Foci in other parts of the body may contribute to the condition. Local treatment, chemotherapeutic drugs and antibiotic preparations are of little value. Intravenous administration of arsenic is almost a specific.

#### The Most Important Consideration

In closing, I would like to make a solemn plea for complete absence of dogma in treating infections of the urinary tract. What is sauce for the goose is not always sauce for the gander. Each case must be studied individually and, above all, the possible relationship to the infection of a co-existing lesion in the urinary tract must ever be borne in mind. Too often, the first sign of a vesical neoplasm may be an acute infection of the urinary tract, which subsides with medication. If the patient is of middle age or older, cystoscopy is a dependable way to exclude this possibility. Again let me say that treatment of infections of the urinary tract, while it may seem simpler than it was ten years ago, is actually much more involved if it is done in other than hit-or-miss style. Certainly, the more cases of such infection which I see, the more I feel that I must learn more about them.

## DERMO-FUNGOUS ALLERGY

(Continued from Page 604)

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## MINNESOTA MATERNAL MORTALITY STUDY

By the Maternal Mortality Committee of the Committee on Maternal Health  
of the Minnesota State Medical Association

**A** CONTINUOUS Statewide Maternal Mortality Study is being carried out as a co-operative study between the Minnesota State Medical Association and the Minnesota Department of Health. It is being conducted by a group of physicians known as the Minnesota Maternal Mortality Committee. This Committee was appointed by the Committee on Maternal Health of the Minnesota State Medical Association, and its members, representing various geographic areas of the state, are serving without remuneration. The funds for the study are being provided by the State Department of Health and a member of that organization, the Chief of the Section of Maternal and Child Health, is also a member of the Maternal Mortality Committee. Two well-trained obstetricians perform the field work of the study and they meet with the committee at various intervals. This study is patterned almost entirely after the previous study which was carried out in the State of Minnesota in 1941-1942.<sup>3</sup>

This report is a general summary of the first year of the current study, from April 1, 1950, through March 31, 1951. It is felt that to better understand subsequent tables and comments, the setup of this study should be discussed briefly. Prior to the onset of the study, all hospitals, city and district health departments, were requested to report maternal deaths promptly to the State Department of Health. Also physicians throughout the state were notified of the study through the Newsletter of the Executive Secretary of the State Medical Association and in addition, by means of notation in Minnesota Medicine. Reports of maternal deaths were made directly to the Section of Maternal and Child Health or indirectly through the Section of Vital Statistics of the State Department of Health. An appointment was then made promptly with the involved physician and the obstetrician-investigator set out to obtain all data regarding the death. The field-work consisted of reviewing the hospital medical records, prenatal records and interrogating all persons who were involved—i.e., physician, con-

sultants, anesthetist, pathologist, interns, residents, nurses, et cetera. Thus an exhaustive amount of data was obtained; in fact, an eighteen page questionnaire was completed for each death. When deemed necessary, x-rays, pathological material, et cetera, were brought to the Committee for review. The obstetrician-investigator then summarized the case study. In his preparation of the case summary additional consultation was obtained from non-obstetrical specialists as the need arose. The case summary was next reviewed by one of the Committee members. Finally, at periodic intervals, the case summaries were presented to the Committee as a whole where final decisions were made as to cause of death, criticism of the management of the case as to whether care was contributory or not contributory to the death of the patient, completion and adequacy of autopsy, completeness and accuracy of death and birth certificates, and final assessment was made as to preventability of, and responsibility for, the death. The case summaries were always presented anonymously where free discussion was possible and unbiased opinions were thus rendered.

The following minimum requirements for adequate obstetrical care were adopted by the Minnesota Maternal Mortality Committee:

### Minimum Requirements for Adequate Obstetrical Care

#### First prenatal visit

1. Adequate history and general physical examination with accurate follow-up of any abnormality revealed by these.
2. Pelvic mensuration to include intertuberos diameter, diagonal conjugate and palpation of sacrum and spines.
3. Laboratory workup—blood serology for syphilis, hemoglobin, urinalysis and Rh determination.

#### Routine prenatal visits

1. Blood pressure determination.
2. Urinalysis, especially for albumin.
3. Weight determination.
4. Abdominal palpation during last two months of gestation.
5. Reasonably adequate study of abnormalities presenting themselves during these visits.

General Summary of study made from April 1, 1950, to March 31, 1951.

# MINNESOTA MATERNAL MORTALITY STUDY

## Labor and delivery

1. Adequate use of generally recognized obstetric procedures.
2. Observance of adequate asepsis.

## Postpartum care

1. Reasonable promptness in the recognition of abnormalities.
2. Reasonable promptness in the institution of adequate treatment.

## Postmortem examination

1. Completeness in itself or as an adjunct to clinical observation.

## Death certificate

1. Accuracy in assignment of cause of death.
2. Completeness of data requested.

## Birth or Stillbirth certificate

1. Completeness in reporting desired data.
2. Accuracy of data.

## Death certificate of child

1. Accuracy in assignment of cause of death.
2. Completeness of requested data.

The maternal mortality rate is intended to be a measure of risk of death from childbirth. It is the number of deaths of women ascribed to pregnancy, childbirth and the puerperium (as set out in Class XI of the Manual of the International List of Causes of Death) per 1,000 live births, over a given time, usually taken as one year.

Chapter XI, number 640-689 (pages 178-188) includes:

pyelitis and pyelonephritis of pregnancy and puerperium; toxemias and sepsis of pregnancy and puerperium; placenta previa and abruptio, and other hemorrhage; ectopic pregnancy, abortion; anemia of pregnancy; hydatidiform mole; puerperal phlebitis; pulmonary embolism; puerperal psychosis, and other related causes.

As in the previous study of 1941-1942,<sup>3</sup> all deaths, associated with pregnancy and the postpartum state are included in this report. The literature makes it clear that there is not uniformity of opinion as to what constitutes a maternal death. The Committee felt that in all fairness it was necessary to present all the deaths associated with pregnancy and the postpartum state so that there could be no ques-

TABLE I.  
SOURCE OF REPORTING OF MATERNAL DEATHS

	No.	Per Cent
Division of Vital Statistics	30	44.1
City Health Departments	17	25.0
Other Sources	21	30.9
Original physician	3	
Field investigator of study	3	
Medical social workers	2	
Consultant	1	
Nurse	1	
Medical student	1	
Non-involved physician	1	
Matching birth and death certificates	9	
Totals	68	100.0

tion of selection. With the presentation of all data, anyone so desiring can calculate corrected figures for so-called "obstetrical deaths." The time limit of the postpartum state is another controversial issue which has not been settled. Some reports include deaths six weeks, others three months and still others six months postpartum. Unfortunately disease processes do not limit themselves to certain time limits. For uniformity, the Committee adopted the three-month postpartum period previously used by the Bureau of Census with the exception of chorionepithelioma deaths. Here is a definite disease of pregnancy, i.e., of the chorionic epithelium and the Committee set no time limit with respect to the inclusion of these deaths in this study. The value of maternal mortality studies such as this has been well established and is common knowledge. No further comment will be made in this regard except to emphasize that the objective of this study is to lower the maternal mortality rate in the State of Minnesota. Certainly none of us is infallible and lessons learned from the study should have an effect with regard to the management of subsequent obstetric patients.

The source of reporting of material deaths is shown in Table I. In 69 per cent of the deaths, notification came through the usual channels of the Division of Vital Statistics and the City Health Departments through the Section of Vital Statistics. What is more important is the fact that twenty-one deaths, (31 per cent) would have been missed had the usual methods of reporting been relied upon since pregnancy or postpartum state was not mentioned on the death certificates of these. In other words, using the criteria set for this study, the maternal mortality rate as determined from the death certificate for the full

# MINNESOTA MATERNAL MORTALITY STUDY

TABLE II. INTERVAL BETWEEN DEATH OF PATIENT AND INVESTIGATION

Interval	No. Deaths	Per Cent
1 wk.	5	7.4
2 wks.	5	7.4
4 wks.	11	16.2
5 wks.	5	7.4
6 wks.	7	10.3
7-8 wks.	7	10.3
9-12 wks.	12	17.6
4 mo.	4	5.9
6-9 mo.	4	5.9
11 mo.	3	4.4
12-17 mo.	5	7.4
Totals	68	100.0

TABLE III. MATERNAL MORTALITY (PER 1000 LIVE BIRTHS) ACCORDING TO AGE OF PATIENT AT LAST BIRTHDAY

Age	No. Mat. Deaths	No. Live Births	Mat. Mort. Rate
15-19	2	5,719	0.349
20-24	11	23,572	0.466
25-29	13	22,959	0.566
30-34	19	14,296	1.32
35-39	14	7,404	1.89
40-44	6	1,972	3.04
45 and over	3	122	24.6
Not stated		30	
Totals	68	76,074	0.894

year of this study would be underestimated by 31 per cent. In three instances the original physical notified the Committee of the death yet failed to mention pregnancy or postpartum state on the death certificate. In the current death certificate form being used by the Section of Vital Statistics, if pregnancy or childbirth complications contributed to the patient's death, these should be listed under "Disease or Condition Directly Leading to Death." If not, the pregnancy state or postpartum state (three months) should be noted under "Other Significant Conditions." As a further check and in addition to the twelve deaths already discovered by various individuals as listed in Table I, the Section of Vital Statistics performed the difficult task of cross-matching death and birth certificates. This was accomplished in the following manner. The death certificates of all women between the ages of fifteen to forty-five dying during the current year of study were taken to the files of birth and stillbirth certificates and these were searched to determine whether a reportable birth had been registered under the name of the deceased within three months of the date of death. As noted in Table I the search revealed nine additional deaths. Even with the cross-matching technique, four deaths would have been missed since of the twenty-one discovered by additional effort, four died undelivered and thus there were no reportable births for these. The implication of discovering twenty-one deaths which would have been missed is that the yearly Minnesota maternal mortality rate is being underestimated by approximately 0.18 points. The 1950 rate of 0.58 per 1,000 live births<sup>4</sup> should in reality be 0.76. It should be kept in mind that the above calculation represents all deaths associated with pregnancy and the puerperium as adopted by the Committee, in contradistinction to corrected rates of the State Department of Health—i.e., including only so-

called "obstetrical deaths." Further analysis of the twenty-one deaths reveals that three were actually the result of obstetrical complications and another was due to rheumatic heart disease where pregnancy effect is certainly clear. The remainder were three suicides, one homicide, two automobile accidents, three brain tumors, two with brain pathology (?tumor, ?hemorrhage), one leukemia, one ruptured intra-cranial aneurysm, one spontaneous hemothorax, one acute yellow atrophy following infectious hepatitis and in two instances the cause of death was not determinable.

The time interval between death of the patient and the investigation is given in Table II. Three-fourths of the deaths were investigated within three months of the time of death. The longer interval of six months and beyond concerned the deaths which were discovered by additional effort as already noted in Table I. The cross-matching procedure was not done until the end of the current year of study which was the reason for delay. Because of poor medical records, about which more will be said later, the sooner the death is investigated and while all details are fresh in the minds of those concerned, the more accurate the data will be. For this reason, for subsequent yearly studies, the State Department of Health requires all hospitals and physicians to notify the State Department of Health within three days of the time of death of a patient dying in association with pregnancy or the postpartum state.

Analysis of maternal mortality (per 1000 live births) according to the age of the mother at the last birthday is recorded in Table III. This shows a progressive increase in the mortality rate with each older age bracket. These figures follow the trends shown by Yerushalmy, Palmer and Kramer<sup>5</sup> and Dickinson and Walker.<sup>4</sup> The mortality

# MINNESOTA MATERNAL MORTALITY STUDY

TABLE IV. MATERNAL MORTALITY (PER 1000 LIVE BIRTHS) ACCORDING TO ORDER OF BIRTH

Order of Birth	No. Mat. Deaths	No. Live Births	Mat. Mort. Rate
1	16	21,280	0.752
2	15	22,922	0.654
3	10	14,812	0.675
4	11	7,933	1.39
5 and 6	10	6,002	1.67
7 and over	6	3,106	1.92
Not stated		19	
Totals	68	76,074	0.894

TABLE V. TIME OF OBTAINING SEROLOGICAL TEST FOR SYPHILIS IN CURRENT PREGNANCY

	No.	Per Cent
Not taken (all registered)	31	45.6
Not taken at 1st visit (all registered)	7	10.3
Not taken (unregistered)	3*	4.4
Taken at 1st visit	24	35.3
Taken at hospitalization (unregistered)	3	4.4
Total	68	100.0

\*Two were hospitalized before death but blood serology was not taken.

rate of patients forty to forty-four is ten times that of patients fifteen to nineteen. There were three deaths in the forty-five and over age bracket even though there were only 122 live births for this age group, giving a staggering mortality rate of 24.6 per cent. The youngest patient was eighteen and the oldest forty-seven. All were white except one Indian and one Mexican. Of the sixty-eight mothers, three were illegitimately pregnant. There were a total of sixty-eight deaths among 76,074 live births for an uncorrected mortality rate of 0.89. The sixty-eight maternal deaths produced 162 motherless children. The socio-economic aspect of this is clear.

Table IV shows maternal mortality (per 1000 live births) according to order of birth. Sixteen (23.5 per cent) of these mothers were primigravidas and the remainder (76.5 per cent) were multiparas. The maternal mortality rate with the first pregnancy is higher (0.7 per cent) than with the second and third pregnancies (0.6 per cent, respectively), but rises appreciably with increasing parity. Again these trends compare with those of Yerushalmy, Palmer and Kramer.<sup>5</sup> Since the youngest mothers are generally of lower parity and older mothers of higher parity, an attempt was made to correlate age and order of birth by keeping one of these factors constant but no significant data was obtained since this series is so small.

Various phases of prenatal care are considered

TABLE VI. ANALYSIS OF MATERNAL DEATHS ACCORDING TO RH DETERMINATION

	Primip.	Multip.	Total	Per Cent
None				
Unregistered	0	2	2	2.9
Registered	5	18	23	33.8
At hospitalization				50.0
Registered	3	8	11	16.2
Unregistered	2	1	3	4.4
At 1st visit or prev. preg.				
Registered	5	21	26	38.2
Unregistered	0	1	1	1.5
Prenatally after 1st visit	1	1	2	2.9
Totals	16	52	68	99.9

in the next four tables. Obtaining a blood test for syphilis early in the prenatal workup of a patient has long been considered a standard procedure essential for adequate prenatal care. The time of obtaining this test in the current pregnancy is analyzed in Table V. Thirty-one (45.6 per cent) of these mothers had no serology taken even though they were registered. By registered is meant that the patient engaged the services of a physician for prenatal care. In seven instances (10.3 per cent) the test were taken after the first visit and in three instances (4.4 per cent), the test was not obtained until hospitalization. It is difficult to comprehend this failure of physicians to obtain a blood test for syphilis since laboratory facilities of the State Department of Health are made available without charge. Since almost one-half (46 per cent) of these mothers did not have the test taken even though they were registered, one wonders what percentage of mothers surviving pregnancy and the postpartum state are receiving the test. One encouraging bit of improvement is to be noted, however, in comparing this data with that of the previous study in 1941-1942.<sup>3</sup> Whereas 62 per cent had no serology in 1941-1942 study, this decreased to 46 per cent for the present study.

The importance of Rh determination in the obstetrical patient has also been well established. In Table VI the maternal deaths are analyzed according to Rh determination. It is seen that twenty-three mothers (33.8 per cent) had no Rh determination even though they were registered patients and eleven (16.2 per cent) did not have the test until after delivery even though they were also registered. In other words, 50 per cent of the registered patients had no Rh determination done at all or until after delivery which again illustrates the faulty type of care these mothers received.

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TABLE VII. PELVIC MENSURATION

	No.	Per Cent
Not measured	38	55.9
Registered	32	67.7
Unregistered	6*	
Incompletely measured	8	11.8
Registered	8	
Completely measured	22	32.4
Normal	22	
Totals	68	100.1

\*Five were hospitalized before death.

Pelvic mensuration is recorded in Table VII. Slightly over two-thirds of these mothers had no pelvic mensuration or incompletely measured pelvis (less than the minimum requirements adopted by the Committee). Of the sixty-two patients (91 per cent) who were registered, 40, or 65 per cent, had no pelvic mensuration or less than required. One death was directly attributable to the fact that the pelvis was incompletely measured. This patient was an essential primigravida who had a transverse presentation at thirty-six weeks gestation which reverted to a floating vertex at term. These warning signs still did not stimulate the physician to at least complete the pelvic mensuration or obtain x-ray pelvimetry. After seventeen hours of good labor, simple anteroposterior and lateral films of the pelvis were obtained because the vertex was not engaged. These films were reviewed by the Committee and revealed a rachitic pelvis with probable inlet and midpelvic contraction. Certainly accurate x-ray pelvimetry was in order. Following a prolonged, obstructed labor, high forceps extraction was attempted but failed. The infant expired soon after the forceps attempt. Patient was then fed juices and water and was taken back to the delivery room where midforceps extraction was attempted under ethylene gas general anesthesia. She vomited and became cyanotic. Suction was applied, oxygen administered and her color returned to normal. Patient was then re-anesthetized, again vomited, aspirated, and remained cyanotic. Difficult midforceps extraction of a stillborn infant was then carried out under local anesthesia. She expired as a result of aspiration (anesthetic death) but the undetected pelvic contraction was the underlying cause of the difficulty. Another patient's death was indirectly attributable to lack of pelvic mensuration. She was a secundigravida whose first pregnancy was terminated by classical cesarean section because of "outlet contraction." No clinical measurements were avail-

TABLE VIII. PRENATAL CARE

	No.	Per Cent
None (all unregistered)	6	8.8
Adequate	15	22.1
Faulty and contributory	14	20.6
Faulty but not contributory	32	47.1
Faulty but contributiveness not determinable	1	1.5
Totals	68	100.1

TABLE IX. PLACE OF DEATH TABULATED WITH PLACE OF DELIVERY

Place of Death	Place of Delivery	No.	Per Cent	
Hospital	Hospital	41	56	82.4
	Undelivered	14		
	Home	1		
Home	Hospital	6	11	16.2
	Undelivered	3		
	Home	1		
	M.D.'s office	1		
Highway (accident)	Hospital	1	1	1.5
Totals		68		100.1

able but the physician stated that the transverse interspinal diameter was small since this would not admit his fist. Simple anteroposterior film of the pelvis had been taken and was available to the Committee for review. This revealed a typical gynecoid inlet, normal sidewalls, small blunt spines and normal pubic angle. The same physician managed her current pregnancy and decided upon repeat cesarean section for delivery, the indication being "outlet contraction and previous cesarean section." She expired during the procedure as a result of respiratory paralysis due to incompetently applied spinal anesthesia in which 20 mg. of pontocaine was used. In one instance the physician deliberately falsified pelvic measurements on the hospital chart. When interrogated about this, his reason was that "these were required to be on the chart by the American College of Surgeons."

Considering the criticism of prenatal care as a whole (Table VIII), it is seen that the care was judged faulty by the Committee in 69 per cent of the cases. The faulty care contributed directly to the patient's death in 21 per cent.

The question arose as to whether lack of hospitalization was a factor in the production of these mortalities. In Table IX, place of death is tabulated with place of delivery. All but five patients (92.6 per cent) were hospitalized for delivery, or for illness if they died undelivered, and thus lack of hospitalization can be exonerated. In

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TABLE X. ATTENDANT AT DELIVERY

	No.	Per Cent	Per Cent Excluding Those Who Died Undel.
Died undelivered	17	25.0	
Unattended	1	1.5	1.9
Nurse	3	4.4	5.9
Physician in gen. pract.	28	41.2	54.9
Obstetrician	13	19.1	25.5
Board Diplomates	8		
Board Qualified	3		
Self-styled	2		
Obstetrics resident	3	4.4	5.9
Midwife	1	1.5	1.9
Self-styled gen. surg.	1	1.5	1.9
Psychiatrist	1	1.5	1.9
Totals	68	100.1	99.8

TABLE XI. DURATION OF GESTATION AT DELIVERY OR AT DEATH IF DIED UNDELIVERED

Stage of Pregnancy	Duration of Gestation	Died Undelivered	No.	Per Cent
Abortion	6 wks.	2	15	22.1
	11-13 wks.	6		
	18-21 wks.	2		
	24-28 wks.	5		
Premature	29-32 wks.	5	10	14.7
	33-34 wks.	5		
		2*		
Term	36 wks.	2	41	60.3
	37-38 wks.	8		
	39-40 wks.	25		
	41-43 wks.	6		
		4*		
Postmature	41 wks.	2	2	2.9
		3*		
Totals		17	68	100.0

\*One of these delivered by postmortem cesarean section.

1950, 98.3 per cent of all births in the state occurred in hospitals.<sup>4</sup>

Attendant at delivery is given in Table X. Seventeen, or 25 per cent, of the patients died undelivered and all but one had physician care. The one patient unattended at delivery (spontaneous abortion at home), subsequently had physician care. Nurses were in attendance for delivery in three instances because of the rapidity of the process but the physicians arrived for delivery of the placenta. All of these had physician prenatal care. Physicians, as noted in the table, were in attendance for the remainder except in one instance where a midwife was present. She was responsible for the patient's death since she insisted on attending the delivery at home and the patient died of postpartum hemorrhage due to retained placenta. In summary then, all but two patients (97 per cent) had physician care. In 1950, physician attendance for births in the state was 99.8.<sup>2</sup>

Duration of pregnancy at delivery or at death if the patient died undelivered is listed in Table XI. Gestation of less than twenty-eight weeks or

TABLE XII. PRESENTATION OF FETUS AND DURATION OF PREGNANCY

Presentation	Duration of Pregnancy	No.	Per Cent	
Vertex	Abortion	2	53	76.8
	Premature	8		
	Term	41		
	Postmature	2		
Breech	Abortion	1	2	2.9
	Term	1		
Unknown	Abortion	12	14	20.3
	Premature	2		
Total		69*		100.0

\*68 patients—1 set of twins.

TABLE XIII. TYPE OF DELIVERY AND DURATION OF PREGNANCY

Type	Duration of Pregnancy	No.	Per Cent	Per Cent Excluding Those Who Died Undel.
Died undelivered	Abortion	6	17	24.6
	Premature	4		
	Term	7		
Spontaneous	Abortion	5	24	34.8
	Premature	4		
	Term	15		
Operative	Abortion	4	28*	40.6
	Premature	2		
	Term	20		
	Postmature	2		
Totals		69**	100.0	100.0

\*See Table XIV.

\*\*68 patients—1 set of twins.

in the absence of a reliable history, delivery of a fetus weighing less than 1,500 grams or measuring less than 35 cm. in crown-heel length, was classified as abortion. In the absence of a reliable history, pregnancy was considered as term if the fetus weighed at least 2,500 grams and/or measured at least 45 cm. in crown-heel length. Excessive size was diagnosed if the fetus weighed 4,000 grams or more. As shown in the table, almost two-thirds (63 per cent) of the deaths occurred at term or past term. Three postmortem cesarean sections were done, none of which was indicated. Two were done ten and eighteen minutes, respectively after death. Credit for the third one goes to an undertaker with the indication being monetary. The patient was an eclamptic and died undelivered at term. The undertaker told the husband the distorted fact that a state law required him to evacuate the fetus. Accordingly, the fetus was evacuated and two funerals were held.

Data pertaining to presentation of the fetus and duration of pregnancy is shown in Table XII. Seventy-seven per cent of the patients had vertex

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presentation, 3 per cent uncomplicated breech and in 20 per cent the presentation was unknown (in the abortion-premature group where presentation was no factor). Malpresentation was certainly no

seems strange that the established superiority of the low cervical type has not yet been accepted. Comparing the cesarean section problem with the previous study of 1941-1942,<sup>5</sup> it is seen that all

TABLE XIV. ANALYSIS OF THE 28 OPERATIVE DELIVERIES

Type of Operative Delivery	No.	Indicated	Not Indicated	Quest. Indicated	No. Contrib. to Death
Low forceps	11	7	4		1
Cesarean section	9	6	1	2	3
Mid forceps	1		1		1
High forceps	1		1		
Hysterotomy	1	1			
Subtotal hyst.	1			1	1
Breech extraction	1	1			
Accouch. force (man. dil. of cervix, version and ext.)	1		1		1
Version and extraction	1		1		1
D & C for inv. abort.	1	1			1
Totals	28	16	9	3	9 (32.1 per cent)

TABLE XV. ANALYSIS OF CESAREAN SECTIONS ACCORDING TO TYPE, INDICATION AND CAUSE OF DEATH

Type	Indication	Cause of Death
1. Classical	Two prev. classicals C.S.	Spinal shock and resp. paralysis
2. Classical	Previous classical C.S.	Spinal shock and resp. paralysis
3. Classical	Art. tox. with acute pre-eclamps.	Shock of undetermined origin
4. Classical	Prob. pl. prev., primipara 2 wks. overdue with large baby	Hemorrhagic shock—? atony ? dyscrasia
5. Classical	Placenta previa	Gen. peritonitis, wound dehiscence
6. Classical	Moribund pt. at 28 wks. with brain tumor	Brain tumor
7. Low cerv.	Rh isoimmunization	Brain tumor
8. Low cerv.	Stem cell leukemia	Stem cell leukemia
9. Radical	Myoma of fundus (6 cm.)	Peritonitis and prob. pulm. emb.

serious factor in the production of these deaths.

Data regarding type of delivery and duration of pregnancy are shown in Table XIII. Excluding the seventeen who died undelivered, 46 per cent of these patients delivered spontaneously and 54 per cent were delivered by operative means. Further analysis of the twenty-eight operative deliveries is recorded in Table XIV. Only 16 (57 per cent) of these procedures were indicated and one-third of the procedures contributed directly to the patients' deaths. Thus radicalism played a prominent part in the demise of these patients. In a summary of this sort, presentation of details of these operative deliveries is not possible. In all likelihood this aspect will receive further attention in subsequent publications. One comment is in order, however. The procedure of accouchement force, which is never indicated, led to one patient's death. The cesarean sections comprised almost one-third of all the operative deliveries and of the nine, six were indicated. Further analysis of the cesarean sections according to type, indication and cause of death is shown in Table XV and is self-explanatory. Two-thirds of the cesarean sections were classical in type and it

nine sections of the present series were elective whereas of the twelve in the previous series, five were non-elective (from eight to 120 hours after the onset of labor).

Analysis of the total operative procedures (obstetric and non-obstetric) done or attempted upon thirty-eight patients is recorded in Table XVI. In this general summary it is not possible to present details of these procedures. Of the sixty-one procedures, only twenty-eight, or 46 per cent, were indicated and 17 (28 per cent) contributed to the death of the patients. This again illustrates that radicalism was a prominent factor in the production of these deaths.

Table XVII analyzes the maternal deaths according to the anesthetic and anesthetist for delivery. Of the sixty-eight deaths in this series, forty-two had some form of anesthesia as shown in the table. The danger of inhalation anesthesia in the obstetric patient because of onset of labor after meals, delayed emptying time of the stomach, et cetera, is common knowledge. In spite of this fact, of the forty-two anesthetics, twenty-five, or 60 per cent, were inhalation anesthetics. Two deaths were directly attributable to this type of

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anesthesia. The patients were fed during labor, received inhalation anesthesia, vomited and aspirated. Realizing that the availability of competent anesthetists for the smaller hospitals in

was caudal. Two patients lost their lives as a result of incompetent spinal anesthesia. One patient received 120 mg. of novocaine for cesarean section (twice the safe maximum dose), was

TABLE XVI. ANALYSIS OF TOTAL OPERATIVE PROCEDURES DONE OR ATTEMPTED UPON 38 PATIENTS

Operation	No.	Indicated	Not Indicated	Quest. Indicated	No. Contrib. to Death
Low forceps	11	7	4		1
Cesarean section	9	6	1	2	3
Uterine tamponade	7	6	1		1
Surg. ind. of labor (memb. rupt.)	5		5		
Vaginal tamponade	3		3		
Postmortem cesarean section	3		3		
Mid forceps	2		2		2
High forceps	2		2		1
Version and extraction	2		2		1
Curettage (postpartum)	2	1		1	1
Suture of lacerated cervix	2	2			
Sub. hyst. (for p.p. hemorrhage)	2		2		2
Hysterotomy (ther. abortion)	1	1			
Pomeroy sterilization (p.p.)	1		1		1
Cornual resection (at hysterotomy)	1	1			
Manual dilation of cervix	1		1		1
Breech extraction	1	1			
Dilatation and curettage	1	1			1
Manual removal of placenta	1		1		
Ligation of uterine artery	1		1		
Sub. hyst. and bil. S.O. (Chorio)	1	1			
Sub. hyst. (ther. abortion)	1			1	1
Closure of wound dehiscence	1	1			1
Totals	61	28	29	4	17 (27.8 per cent)

TABLE XVII. ANALYSIS OF MATERNAL DEATHS ACCORDING TO ANESTHETIC AND ANESTHETIST FOR DELIVERY

	Accoucher	Nurse Anesth.	Nurse	M.D. Anesth.	None	Totals	No. Contrib. to Death
None, died undelivered					16	16	
Died undelivered							
N <sub>2</sub> O—attempted del.		1				1	1
Local infiltration	10					10	
Local + open drop ether	1*					1	
Local + Baird's sol. + N <sub>2</sub> O	1**					1	
Spina	5***			1		6	3
Caudal	1					1	
Ether (open drop)		2	3			5	3
N <sub>2</sub> O		2	1			3	2
N <sub>2</sub> O + ether		2	1			3	
Ethylene		2				2	1
Ethylene + cyclo.		1				1	
Cyclo. + N <sub>2</sub> O		1		1		2	
Vinethene (open drop)			1			1	1
Chloroform (open drop)						1	
Baird's sol. + N <sub>2</sub> O	1	1		1		2	1
Baird's sol. + ethylene		1				1	
Pentothal + N <sub>2</sub> O		1				1	
None for delivery					10	10	
Totals	19	14	6	3	26	68	12 (28.6 per cent)

\*Open drop ether by general physician.

\*\*Baird's sol. + N<sub>2</sub>O by M.D. anesth.

\*\*\*Sodium pentothal by general physician.

the state is an acute problem, it would seem that local anesthesia is the ideal solution. Here is a procedure which is safest for both mother and child and the technique is simple and easy to master. Of the forty-two anesthetics administered, only 10, or 24 per cent, had local infiltration alone. It seems strange that this simple procedure has not gained more favor. Of the remaining anesthetics given, six were spinal and one

tilted in slight Trendelenburg, no intravenous fluids were started, no blood pressure cuff was applied, only 2.5 mg. of neosynephrine was given intramuscularly and she was being checked occasionally by the circulating nurse regarding color and pulse. Two physicians were performing the surgery and a third was standing around to take the baby. His services would have been much more useful had he been at the head of the table

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observing the patient. She expired twenty minutes following the injection of novocaine as a result of respiratory paralysis and shock. The other patient received 20 mg. of pontocaine with

Considering entire care during labor and/or for delivery (Table XIX), the Committee assessed care as adequate in only 30.9 per cent. Care was faulty in some aspect in 56 per cent

TABLE XVIII. DEATH INTERVAL OF MOTHER AFTER BIRTH OF FETUS CORRELATED WITH CAUSE OF DEATH WITHIN FIRST 24 HOURS

	No.	Per Cent	Per Cent Excluding Those Who Died Undel.	Cause of Death				
				Hemorrh. Shock	Unexpl. Shock	Tox.	Anesth.	Misc.
Undelivered*	17	25.0						
Within 1st hr.	5	7.2	9.8	2	1		2	
From 2-12 hrs.	12	17.6	23.5/39.2	4	2	3	1	2**
From 13-24 hrs.	3	4.4	5.9	1		1		1***
In 1st week	10	14.7	19.6					
In 1st month	8	11.8	15.7					
In 2nd month	4	5.9	15.7					
In 3rd month	8	11.8	15.7					
9 mo. p.p. (Chorio)	1	1.5	1.9					
Totals	68	99.9	99.9					

\*Includes 3 patients delivered by postmortem cesarean section.

\*\*One poliomyelitis and one pituitrin shock.

\*\*\*Peritonitis (ruptured appendix).

TABLE XIX. CARE IN LABOR AND/OR FOR DELIVERY

	No.	Per Cent
Adequate	21	30.9
Contributiveness not determinable	1	1.5
None, (midwife care)	1	1.5
None, del. at home unattended (ab.)	1	1.5
None, died before labor	11	
Not hospitalized	3	4.4
Hospitalized	8	
Adequate hospital care	3	4.4
Faulty hosp. care but not contrib.	1	1.5
Faulty hosp. care and contrib.	4	5.9/44.1
Faulty and contributory	26	38.2/55.9
Faulty but not contributory	7	10.3
Totals	68	100.1

TABLE XX. POSTPARTUM CARE

	No.	Per Cent	Per Cent Excluding Those with No p.p. Care
None, died undelivered	17	25.0	
Hospitalized	14		
Not hospitalized	3		
None, expired at delivery	2	2.9	
None, (midwife care)	1	1.5	
Adequate	18	26.5	37.5
Faulty but not contributory	3	4.4	6.2/62.5
Faulty and contributory	27	39.7	56.3
Totals	68	100.0	100.0

dextrose for cesarean section (four times the safe maximum dose for the pregnant patient) and the head of the table was not elevated until the anesthesia had reached the nipple line. She likewise expired as a result of respiratory paralysis and shock. Of the forty-two anesthetics administered only three (7 per cent) were given by physician-anesthetists, six (14 per cent) by nurses without previous anesthesia training, fourteen (33 per cent) by nurse-anesthetists and nineteen (45 per cent) by the obstetrician.

The death interval of the mother after birth of the fetus correlated with the cause of death within the first twenty-four hours is recorded in Table XVIII. Considering only those patients who delivered, twenty or 39.2 per cent expired within the first twenty-four hours following delivery. It is seen that one-half of these (ten) expired as result of shock and the remainder due to toxemia, anesthesia and miscellaneous causes.

and contributory to the death of the patients in 44 per cent.

An evaluation of postpartum care is summarized in Table XX. Of the patients receiving postpartum care, only 37.5 per cent had care which was considered adequate and the remainder (62.5 per cent) had faulty care. Of the patients with faulty care, in 56 per cent of the instances, this care contributed to the death of these patients.

Adequacy of consultation is analyzed in Table XXI. As in the previous study of 1941-1942,<sup>3</sup> consultation was considered adequate when the patient was examined by the consultant and there was fulfillment of the minimum standards as adopted by the Committee. Telephone and "curbstone" consultations were considered inadequate. Twenty-nine or 42.6 per cent of the patients had no consultation whereas the Committee judged that in seventeen (25 per cent) of these, consultation was

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TABLE XXI. ADEQUACY OF CONSULTATION

	No.	Per Cent	Per Cent Excluding Those Not Obtained
None			
Indicated	17	25.0	
Not indicated	12	17.6	
Adequate throughout	22	32.4	56.4
Board obstetrician	3		
Board obstet. and other spec.	7		
Other spec.	7		
Other self-styled spec.	2		
Physician in general practice	3		
Inadequate	17	25.0	43.6
Board obstetrician	1		
Board qualified obstetrician	1		
Board obstet. and other spec.	2		
Other spec.	3		
Self-styled obstet. and other spec.	1		
Other self-styled spec.	1		
Physician in general practice	8		
Totals	68	100.0	100.0

definitely indicated. The lack of consultation when indicated in 25 per cent and inadequate consultation in another 25 per cent shows that one-half of the total number of patients were not given the benefit of an established procedure during their fatal illness. There is no question but that many of these women could have been salvaged had adequate consultation been obtained.

The primary causes of death are listed in Table XXII. In some instances several factors may have contributed to the patient's death but only the primary cause is listed. The causes of death as shown in the table were determined by the committee after careful evaluation of each case and are independent of the causes listed on the death certificates.

In a general summary of this sort it is impossible to enumerate the details of these categories. Subsequent publications will be forthcoming but certain comments are in order at this time. Toxemia of pregnancy was the leading cause of death and briefly the most glaring errors with regard to management of this condition were inadequate prenatal care, failure to act in the presence of symptoms, especially epigastric pain, inadequate patient study, inadequate sedation, use of intravenous saline, use of pituitrin, administration of open drop ether for convulsions in the presence of pulmonary edema, excessive intravenous therapy and delay or absence of consultation. It is interesting to note that

TABLE XXII. PRIMARY CAUSE OF DEATH

	No.	Per Cent
Toxemia	13	19.1
Eclampsia	5	
Arteriosclerotic	6	
Anuria and uremia	2	
Shock of unexplained origin	2	
Cerebral hemorrhage	1	
Liver necrosis, rupt. and hemorrh.	1	
Sev. pre-eclampsia (pulm. edema and shock)	1	
Unclassified toxemia (liver necrosis)	1	
Obstetric hemorrhage	9	13.2
Rupture of uterus	5	
Spont. (prev. C.S.)	1	
Spont. during labor	1	
Traumatic rupt. and complete abruptio (auto accident)	1	
Injudicious use of pitocin in labor	1	
Pituitrin, 1 cc. for ind. of labor	1	
Postpartum hemorrhage	4	
Retained placenta and atony	1	
Atony and/or ? uterine rupture	1	
Atony and ? hemorrhage dyscrasia	1	
Atony	1	
Infection	7	10.3
Septic abortion	2	
Peritonitis and prob. pulm. emb. after rad. C.S.	1	
Peritonitis and abd. evisc. after class. C.S.	1	
Peritonitis from perforated appendix	1	
Pulm. emb. from prob. axillary thrombophlebitis and ? pelvic thrombophlebitis	1	
Pulm. emb. from superficial thrombophleb.	1	
Heart disease	4	5.9
R.H.D. with acute left vent. failure	2	
Cong. H.D. with cardiac failure	1	
Hyp. H.D. with acute left vent. failure	1	
Anesthesia	4	5.9
Spinal—shock and resp. paralysis	2	
Inhalation—vomiting and asp.	1	
Inhalation—laryngospasm, vomit. and asp.	1	
Other obstetrical complications	9	13.2
Amniotic fluid embolism	2	
Unexp. shock after low forceps delivery	1	
Pituitrin shock	1	
Chorionepithelioma	1	
Air embolism (attempted self induced ab.)	1	
Left vent. failure from overtreatment of sev. anemia of pregnancy	1	
Not determinable	1	
? Amniotic fluid embolism	1	
? Criminal abortion ? rupt. of uterus	1	
Non-obstetrical complications	16	23.5
Brain tumor	3	
Brain pathology—? tumor, ? hemorrh.	2	
Acute bulbar poliomyelitis	2	
Cerebral hemorrh. (rupt. of aneurysm)	1	
Carcinomatosis (primary stomach)	1	
Shock due to spont. hemothorax (cause unkn.)	1	
Coronary thrombosis	1	
Chronic glomerulonephritis with uremia	1	
Acute atrophy of liver (infect. hepatitis), p.p.	1	
Stem cell leukemia	1	
Irreversible insulin coma (shock therapy for manic dep. psychosis)	1	
Not determinable (sudden death postpartum—autopsy neg.)	1	
Traumatic	6	8.8
Suicide	3	
Homicide	1	
Automobile accident	1	
Crushed chest, internal injuries (p.p.)	1	
Cardio-pulm. insuff. following thorocentesis	1	
Totals	68	99.9

in this group there were two deaths from severe liver necrosis with massive hemorrhage. Eastman<sup>2</sup> states that this is a rare complication and he quotes Sanes and Kaminski who reported a case of their own and abstracted five additional cases from the literature. All of these occurred in eclampsics whereas the two in this series occurred in an arteriosclerotic and in an unclassified toxemia.

Obstetric hemorrhage was the second leading cause of death. In five out of these nine

# MINNESOTA MATERNAL MORTALITY STUDY

TABLE XXIII. PRIMARY CAUSE OF DEATH

Cause of Death	No.	Per Cent	Per Cent Excluding Non-Obstetrical Complications
Non-obstetrical complications	22	32.4	
Toxemia	13	19.1	28.3
Obstetric hemorrhage	9	13.2	19.6
Infection	7	10.3	15.2
Heart disease	4	5.9	8.7
Anesthesia	4	5.9	8.7
Other obstetrical complications	9	13.2	19.6
Totals	68	100.0	100.1

deaths the Committee assessed direct responsibility for the death to the physician involved. It is surprising that hemorrhage took such a heavy toll in spite of present-day improved obstetric technique and the availability of blood for transfusion. In all but one of the nine instances, Red Cross blood banks were available yet the patients received an inadequate amount of blood, none at all or it was administered too late. The false idea seems to be prevalent that one pint of blood is adequate blood replacement therapy. No consideration was given to the administration of type O, rh negative blood in an emergency or forcing blood in under pressure. One patient with history and findings which were typical of rupture of the uterus was allowed to remain in shock for seven and one-half hours until her death. Two hours prior to death, 1,000 cc. of 5 per cent glucose in normal saline was started subcutaneously and thirty minutes before death, 500 cc. of plasma was started. Injudicious use of pituitrin and pitocin were responsible for the death of two of these hemorrhage deaths. The first was a grand multipara who was proceeding normally in labor until the physician administered pitocin, 4 m. (h) near the completion of the first stage. The result was laceration of the cervix, hemorrhage and death. The second patient received a single dose of 1 cc. of pituitrin (h) for induction of labor (administered by a nurses' aid) whereas the physician had ordered 4 m. every one-half hour for five doses.

It is surprising that infection was the third leading cause of death in spite of the availability of sulfonamides and the numerous antibiotics. The four anesthesia deaths have been discussed in detail elsewhere. Combining the 1941-1942 study<sup>3</sup> and the present one, it is seen that there were a total of seven anesthetic deaths and nine eclamp-

TABLE XXIV. PREVENTABILITY OF AND RESPONSIBILITY FOR DEATH

	No.	Per Cent
Preventable	22	32.4
Physician responsibility	19	
Physician and disease resp.	1	
Physician and hospital adm. resp.	1	
Patient and disease resp.	1	
Not determinable	1	1.5
Not preventable	40	58.8
Disease responsibility	37	
Disease and patient resp.	3	
Probably preventable	3	4.4
Physician responsibility	1	
Phys., pt. and disease resp.	1	
Patient and disease resp.	1	
Possibly preventable	2	2.9
Physician and disease resp.	2	
Totals	68	100.0

tic deaths. Thus anesthesia as a cause of death in the state is very nearly as important as eclampsia. The significance of this is obvious. It is gratifying to report that there was no single death attributable to ectopic gestation during the current year of study.

Table XXIII represents a more concise summary of the cause of death. One-third of all the deaths were due to non-obstetrical complications. Comparing this with the previous study of 1941-1942,<sup>3</sup> a definite trend of improvement is noted in the obstetric care. In the previous study only 17 per cent of the deaths were due to non-obstetrical complications. If the so-called non-obstetrical deaths are excluded, the present study shows a corrected maternal mortality rate of 0.6 per 1,000 live births (forty-six deaths among 76,074 live births).

Preventability of death with establishment of responsibility for death is presented in Table XXIV. Twenty-two or 32.4 per cent of the deaths were assessed as preventable by the Committee and physicians were entirely responsible in nineteen and partially in two. When the Committee assessed deaths as possibly or probably preventable, these were considered as not preventable in the final tabulation. In a report concerning maternal mortality in the United States in 1949, Dickinson and Welker<sup>4</sup> state that "the rate of 1 per 1,000 live births is apparently an irreducible minimum" and that "the maternal mortality problem in the United States is no longer a serious national problem but is, rather, one for local action in those areas in which maternal mortality rates are still relatively high." The Committee wishes to take issue with these statements. In the state of Minnesota where the uncorrected maternal mortality rate for the pres-

# MINNESOTA MATERNAL MORTALITY STUDY

TABLE XXV.  
ADEQUACY OF POSTMORTEM EXAMINATIONS

	No.	Per Cent
Obtained and adequate	24	35.3\38.2
Obtained and inadequate	2	2.9
None, not requested by physician	29	42.6
None, requested by phys. and refused	11	16.2\17.7
None, requested by nurse and refused	2	2.9
Totals	68	99.9

ent year of study is 0.89 per 1,000 live births (below the corrected national figure of 1 per 1000), there is still ample room for improvement since one-third of these deaths were definitely preventable. Marked improvement of care in the state has occurred as noted by again comparing the present study with the one done in 1941-1942.<sup>3</sup> In 1941-1942, 73 per cent of the deaths were considered preventable whereas this decreased to 32 per cent in the present study.

Adequacy of postmortem examinations is recorded in Table XXV. Thirty-five per cent of the patients had autopsies which were considered adequate in arriving at an accurate diagnosis. This is an improvement as regards previous study of 1941-1942<sup>3</sup> when only 8 per cent were considered adequate. There is much room for improvement as evidenced by the fact that in 42.6 per cent of these deaths, no attempt was made to obtain an autopsy. This indicates an unhealthy lethargy on the part of the physicians since the value of an autopsy is certainly clear. Since many of the physicians gave the reason that no pathologist was available, the Committee has arranged for the service of a University of Minnesota pathologist for subsequent deaths. He can be obtained by contacting the State Department of Health.

Analysis of maternal death certificates according to accuracy and completeness is shown in Table XXVI. Only 22 per cent of these were complete and correct. In six instances (8.8 per cent), there was actual falsification of the certificate. One physician was involved in two instances. His first patient died suddenly during labor with cause of death unknown (clinical history and findings suggested possible amniotic fluid embolism but no autopsy was obtained), yet the physician listed cause of death as unqualified coronary occlusion due to rheumatic heart disease. His reason was "so he wouldn't be bothered by the State Health Department." His other death

TABLE XXVI. ANALYSIS OF MATERNAL DEATH  
CERTIFICATES ACCORDING TO ACCURACY  
AND COMPLETENESS

	No.	Per Cent
Complete and correct	15	22.1
Complete but incorrect	7	10.3
Incomplete and incorrect	21	30.9
Incomplete, incorrect and false	6	8.8
Incomplete, otherwise correct	19	27.9
Totals	68	100.0

was an unmistakable anesthetic death (spinal anesthesia), yet he listed this as "surgical shock." The third death was also a spinal anesthetic death but the physician listed the cause of death as "pregnancy." The fourth death was also an anesthetic death (inhalation anesthesia with vomiting and aspiration) and the physician listed this but did not mention the pregnancy state. The fifth patient died as a result of generalized peritonitis from a perforated appendix yet the perforated appendix was not mentioned even though this was found at autopsy. With regard to the sixth death, the death certificate was falsified for fear of legal implications. Considering the one item on the death certificate of cause of death, 33.8 per cent of these were completely incorrect when compared with the actual cause of death as determined by the Committee. This immediately raises the question of the accuracy of the data supplied by the Bureau of Vital Statistics of the State Department of Health when material presented to them on the death certificates is so incorrect.

In the same vein, analysis of birth and stillbirth certificates according to accuracy and completeness is given in Table XXVII. Only 31 per cent of these were complete and correct.

Outcome of child and duration of pregnancy is tabulated in Table XXVIII. It is seen that only 46.4 per cent of the deliveries associated with these maternal deaths terminated with living children who survived, 26.1 per cent terminated with stillbirths or neonatal deaths, 7.2 per cent terminated as abortions and 20.3 per cent died undelivered. A total of seventeen patients died undelivered but three of these were subjected to postmortem cesarean sections without success. Of the remaining fourteen, nine or 13.2 per cent had viable pregnancies. The above figures coincide with those of the previous study in 1941-1942,<sup>3</sup> and again show the strong association be-

# MINNESOTA MATERNAL MORTALITY STUDY

TABLE XXVII. ANALYSIS OF BIRTH AND STILLBIRTH CERTIFICATES ACCORDING TO ACCURACY AND COMPLETENESS

	No.	Per Cent
Complete and correct	21	30.9
Complete but incorrect	11	16.2
Incomplete and incorrect	12	17.6
Incomplete, otherwise correct	4	5.9
Not reported, required	1	1.5
Not reported, not required	19	27.9
Early abortion	5	
Died undelivered	14*	
Totals	68	100.0

\*Does not include the three patients who were delivered by post-mortem cesarean section.

tween death of the mother and loss of the offspring.

## Summary

As previously mentioned elsewhere in this summary, five patients died without having been hospitalized at any time during their illness. Considering only bare essentials of a medical hospital record as acceptable, twenty-five of the sixty-three (40 per cent) were grossly inadequate. In eight instances only nurses' notes were available. In one instance there was no medical record available even though patient expired soon after admission to the hospital. In many instances, physician prenatal records were also grossly incomplete and in several instances, no prenatal records were available.

1. A continuous yearly maternal mortality study is being carried out in the State of Minnesota by the Maternal Mortality Committee of the State Medical Association. A general summary of the study, from April 1, 1950, through March 31, 1951, has been presented.

2. Due to the failure of physicians to mention pregnancy or the postpartum state on the death certificate, the yearly Minnesota maternal mortality rate is being underestimated by 31 per cent or approximately 0.18 points.

3. Analysis of the maternal mortality according to the age of the mother showed a progressive increase in rate with each older age bracket. The mortality rate of patients forty to forty-four is ten times that of patients fifteen to nineteen years of age.

4. There were sixty-eight maternal deaths among 76,074 live births for an uncorrected maternal mortality rate of 0.894.

5. Analysis of the maternal mortality accord-

TABLE XXVIII. OUTCOME OF CHILD AND DURATION OF PREGNANCY

Outcome of Child	Duration of Pregnancy	No.	Per Cent
Born alive and survived	Premature 1 Term 29 Postmature 2	32	46.4
Born alive and died neonatally	Late abortion (28 wks.) 1 Term 1	2	2.9
Stillborn		16	23.2
Macerated 4	Abortion (24 wks.) 1 Premature 2 Term 1		
Non-macerated 12	Abortion (24 wks.) 2 Premature 4* Term 6**		
Other abortions (12-19 wks.)		5	7.2
Undelivered		14	20.3
Totals		***69	100.0

\*Includes one postmortem cesarean section.

\*\*Includes two postmortem cesarean sections.

\*\*\*68 patients—1 set of twins.

ing to order of birth showed a progressive rise in rate with increasing parity after the third delivery.

6. Even though the obtaining of a blood serological test for syphilis has long been considered a standard procedure essential for adequate prenatal care, 46 per cent of these mothers had no serology taken even though they were registered. By registered is meant that the patient engaged the services of a physician for prenatal care.

7. Even though the importance of an Rh determination in the obstetric patient has also been well established, 50 per cent of the registered patients had no Rh determination done at all or it was done after delivery.

8. Of the sixty-two patients who were registered, forty or sixty-five per cent had no pelvic mensuration whatsoever or less than the minimum requirements as adopted by the Committee. Two deaths can be attributed to the fact that their pelvis were incompletely measured.

9. Considering the minimum requirements for adequate obstetrical care as adopted by the Maternal Mortality Committee, prenatal care was faulty in 69 per cent, care during labor and/or for delivery was faulty in 56 per cent and postpartum care was faulty in 63 per cent. The faulty care contributed directly to the patient's death in 21 per cent as regards prenatal care, 44 per cent as regards labor and delivery and 56 per cent as regards postpartum care.

10. Sixty-three patients (93 per cent) were

## MINNESOTA MATERNAL MORTALITY STUDY

hospitalized for delivery or for illness if they died undelivered.

11. Sixty-six patients (97 per cent) had physician care.

12. Malpresentation was no factor in the production of these deaths.

13. Radicalism was a prominent factor in the production of these deaths as evidenced by the fact that 54 per cent of the deliveries were by operative means. Of the total number of operative deliveries (twenty-eight), the Committee judged only sixteen (57 per cent) to be indicated and one-third of the procedures contributed directly to death of the patients.

14. The cesarean sections comprised almost one-third of all the operative deliveries. All of the nine cesarean sections performed were elective and the Committee judged six of these as being indicated.

15. Considering the total number of operative procedures performed (sixty-one), both obstetrical and non-obstetrical, 46 per cent were indicated and 28 per cent contributed to the death of the patients.

16. Of the sixty-eight maternal deaths, forty-two had some form of anesthesia for delivery. Of the forty-two anesthetics, 60 per cent were of the inhalation type. Four deaths were directly attributable to anesthesia. Two deaths were due to vomiting and aspiration and two were due to incompetently applied spinal anesthesia. Only 7 per cent of the anesthetics were administered by physician-anesthetists.

17. Twenty-nine or 43 per cent of the patients had no consultation whereas the Committee judged that in seventeen (25 per cent), consultation was definitely indicated. Another 25 per cent had consultation which was inadequate.

18. The primary cause of death is tabulated. Toxemia was the leading cause, obstetric hemorrhage second and infection third.

19. One-third of deaths were due to non-obstetrical complications. On excluding the "non-obstetrical deaths," a corrected maternal mortal-

ity rate of 0.6 per 1,000 live births is obtained.

20. Twenty-two or 32 per cent of the deaths were assessed by the Committee as preventable. The physician was entirely responsible in nineteen and partially in two.

21. Thirty-five per cent of the patients had autopsies which were considered adequate.

22. Only 22 per cent of the death certificates were complete and correct. In six instances there was actual falsification of the death certificate. Considering the one item on the death certificate of cause of death alone, 34 per cent of these were completely incorrect when compared with the actual cause of death as determined by the Committee.

23. Only 46 per cent of the deliveries associated with these maternal deaths terminated with living children.

24. Considering only the bare essentials of a medical hospital record as acceptable, 40 per cent were grossly inadequate and often enough there was no record at all. This almost always means that essential laboratory and clinical data were not obtained. Diagnostic failure was often dependent on this. Hospitals must see to it that this situation is changed since the safety of patients is directly involved.

25. All hospitals are now required to notify the State Department of Health within three days of the time of a maternal death.

## References

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5. Yerushalmy, J., Palmer, C. E., and Kramer, M.: Studies in childbirth mortality. II. Age and parity as factors in puerperal fatality. Reprint No. 2175, *Pub. Health Rep.* 55:1195-1220, 1940.

## LESIONS OF THE CHEST

The existence of isolated well-circumscribed intrathoracic nodules on routine x-ray examination of the chest may indicate the presence of significant disease. In particular, the possibility that the lesions represent an early phase in the development of bronchogenic carcinoma is to be considered. The asymptomatic charac-

ter of the nodule, the absence of physical signs and the apparent state of good health of the patient must not lead the physician to the false conclusion that the abnormality cannot be significant and that it therefore does not require treatment.—SIDNEY E. WOLPAW, M.D., *Annals of Internal Medicine*, Sept., 1952.

# Laboratory Aids to Medical Practice

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## TESTS FOR CANCER

Clinicians, surgeons and pathologists alike anticipate the time when a reliable and inexpensive test will be readily available for the detection of cancer. Such a time has not arrived yet, despite the fact that literally hundreds of techniques for this purpose have been published. Nevertheless, so many of these proposed tests have achieved such wide publicity, or even notoriety, that the pathologist frequently is questioned as to why he does not perform such tests. Therefore, this report will attempt a brief summary of the present status of such tests.

Recent improvements in therapy make imperative the development of a technique to allow early diagnosis of malignant disease. Why has no investigator come up with a reliable immunologic test for cancer similar to the tests that have been available for years in diseases such as syphilis, typhoid fever and brucellosis? The basic problems in cancer are quite different from those in an infectious condition. The etiologic factor concerned in cancer is unknown; indeed, a number of different causative agents may be present, which circumstance may render attainment of a single, successful test rather remote in light of current knowledge. Homburger<sup>1</sup> discussed the evaluation of diagnostic tests for cancer; his report summarized a number of past and present techniques, most of which have been discarded. He listed 238 references, yet it is certain that many more tests than this have been fostered at some time or other. In general, he divided the basic categories of tests into morphologic techniques, tests based on urinary constituents, chemical changes in the blood, chemical changes in the body secretions, immunologic changes and enzymologic procedures.

What are some of the requirements of a good test for cancer? The test must detect malignant disease in an early stage. The technique must be simple and readily reproducible. The procedure must be of great specificity so that positive results will be found only in malignant disease. It

is obvious that any test giving an appreciable incidence of false positive results will entail great expense for subsequent diagnostic work and will impose extreme mental anguish on healthy persons victimized by such faulty results. False negative reactions should not occur; the dangers of such negative reactions in the presence of a malignant tumor are obvious. Positive and negative reactions should be sharply demarcated, with a minimal zone of doubtful reactions.

Acquisition of such a test might appear to be related to utopianism but actually many immunologic and chemical procedures performed daily in medical laboratories approach this degree of accuracy, specificity and reliability. Certainly, no test for detection of cancer available at present can remotely qualify for these requirements.

Tests proposed for the diagnosis of cancer range in complexity from observation of the patterns in a drying drop of blood to extremely complicated chemical and enzymatic assays. The basic fault in many of these tests is that the characteristic claimed to be diagnostic for malignancy is one that is extremely unstable or variable, making reproducible interpretations of changes in such a characteristic well-nigh impossible. Many of us remember the test proposed several years ago by a young pathologist in the Upper Midwest; the technique depended on a relatively simple change in the urine. This pathologist and his test became famous when results of his test performed on his own urine suddenly changed from negative to positive; he was then found to have a malignant brain tumor, which caused his death shortly after its discovery. What has happened to this test? It has suffered the same retreat into obscurity that has occurred to so many similar tests based on superficial study of a handful of cases and so often colored by the bias of the original promulgator.

Another test was based on decolorization of methylene blue by plasma. It was stated by Black that plasma obtained from patients who had can-

cer displayed decreased powers of reduction and that such plasmas could be differentiated accurately by their action on dyes. The original report of this test showed considerable lack of information concerning the malignant disease itself and even greater lack of data about other possible complicating factors. Great controversy arose concerning this test for several years until a number of reports had accumulated to demonstrate its complete invalidity as a procedure for the detection of cancer.

A large number of tests dealing with chemical changes in the blood have been proposed. Many of these tests give an amazingly high incidence of positive reactions in patients who have cancer; however, an even more amazingly high incidence of positive reactions occurs in control patients. One test gave correctly positive results in 52 to 91 per cent of cases, but correctly negative results in as few as 20 per cent of cases. Positive reactions to another procedure were 85 per cent correct but the test gave as much as 76 per cent false negative results. Still another test gave 72 to 96 per cent positive reactions in a series of patients who had cancer but at the same time gave from 5 to 54 per cent positive results in patients who did not have malignant disease.

The iodoacetate index has been studied by a number of workers after being tried by Huggins and his group in an effort to "screen" patients who had cancer. Huggins and his co-workers were conservative about the specificity of this procedure. Homburger stated that the original technique was not reproducible and possessed an uncertain end point. A recent modification was more reproducible but also more insensitive; a survey showed that it produced 21 per cent false

negative and 23 per cent false positive reactions. It was evident that these rates would be even greater in early stages of malignant disease. Homburger concluded that in its present form the procedure was useless and confusing as a diagnostic test for cancer. Nevertheless, advertisements appeared from commercial laboratories offering a kit for the practical performance of the Huggins' test for cancer in the physician's office. Such a situation obviously is deplorable.

It is apparent, therefore, and regrettably so, that no reliable test for the detection of cancer is available at present. This means that the early diagnosis of cancer still depends on education of the general population and constant awareness by the physician of the possibility of malignant disease. Use of biopsy and of smears for malignant cells is the only dependable means at hand for identification of cancer.

### Reference

1. Homburger, F.: Evaluation of diagnostic tests for cancer. I. Methodology of evaluation and review of suggested diagnostic procedures. *Cancer*, 3:143-172 (Jan.) 1950.

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This is the sixth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to foster closer relationships among practicing physicians and pathologists. The previous reports have emphasized what the pathologist can do to aid his colleagues. This report discusses a hiatus in laboratory procedures and points out what the laboratory physician cannot do. It is anticipated that a reliable test for the detection of cancer will be developed at some future time; when it is, the procedure will be embraced eagerly by all physicians.

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### REVISION OF N. N. R. STATEMENT ON TESTES

In the customary annual reconsideration of the text of New and Nonofficial Remedies it was pointed out to the Council that exaggerated and unwarranted claims are made for the use of these agents in the so-called male climacteric. In order to promote rational use and to establish reasonable limits to such claims the Council adopted the following paragraph to be inserted in the general statement on testes (N. N. R. 1952, p. 367):

"A spontaneous cessation of hormone release by the testis with aging has been recognized as a rare entity termed male climacteric or menopause. Symptoms are similar to those of the female menopause. In the vast majority of instances, the vague manifestations of a

psychoneurosis are incorrectly confused with those of organic testicular disorder. Criteria for laboratory confirmation of the diagnosis of male climacteric are equally confused. At present, such diagnosis probably is not justified without the demonstration of castration levels of urinary gonadotropin, as in the female. Testosterone provides effective replacement therapy only in the true disorder."

The Council has hitherto accepted only preparations of testosterone propionate and methyl testosterone. As corollary to the preceding decision the Council voted also to consider preparations of free testosterone.

MINNESOTA MEDICINE

# Case Report

## DISSECTING ANEURYSM OF THE AORTA WITH NEUROLOGICAL COMPLICATIONS

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Dissecting aneurysm of the aorta is a relatively uncommon condition. It may, however, present a wide variety of symptoms and clinical findings. It may be confused with many intrathoracic conditions especially coronary thrombosis. The abdominal findings may suggest any of several acute surgical conditions, diagnosis of which could result in unwarranted operations. A correct diagnosis is essential if an accurate prognosis is to be given. Almost all of the conditions with which it may be confused are less rapidly fatal.

### Case Report

A white man, aged fifty, was admitted to Northwestern Hospital, Minneapolis, at 10:00 a.m. on June 10, 1952. His complaints on admission were as follows: (1) acute left anterior chest pain, radiating from the sternum through to the back, at the cardiac level; (2) paralysis of the lower extremities; (3) numbness in the lower abdomen and legs. These symptoms were associated with profuse perspiration and a cold and clammy skin.

**History of Present Illness.**—The patient stated that he went to his work in a restaurant in Minneapolis at the usual time on the day of his admission. He felt well until approximately 9:30 a.m. Then, while going upstairs, he was suddenly seized with an excruciating pain in the left chest and the left part of his back. The pain was so severe as to cause prostration. He took a dose of baking soda in water without any relief. He arrived at the Northwestern Hospital by ambulance shortly following the onset of the pain. He stated that he had had some pain in the right flank during the past year that came in spells, although it was never as severe as the present attack; it was enough, however, to cause him to consult another physician. He said that the doctor took x-rays of the kidney region, but that no definite diagnosis was made. He had an exacerbation of this pain in the side the night before the present attack and, on instructions from his doctor, took a hot sitz bath which gave him considerable relief.

**Past History.**—The past history was essentially of no importance. He had had no serious illnesses and no operations. Close questioning revealed that about thirty years previously he had had a course of treatment with arsenicals, most likely for a luetic infection. He had had no treatment for this condition recently.

**Physical Examination.**—The patient was a well-developed, well-nourished, white man, about fifty years of age. He was approximately 6 feet tall and weighed about 200 pounds. At the time of the examination, he was obviously in great distress. The skin was cold and clammy, and he was perspiring profusely. He was moderately cyanotic. His blood pressure on admission was reported as 180/60; temperature, 97 degrees; pulse, 98; respirations, 26.

Presented at the Annual Meeting of the Southern Minnesota Medical Association, Austin, September 8, 1952.

JUNE, 1953

The positive findings on physical examination were as follows. There was a systolic murmur to the left of the sternum, grade II, soft, and somewhat coarse. The heart did not appear enlarged, and the liver was not palpable. There was some tenderness on deep pressure in the abdomen but no masses could be felt. There was a difference of the blood pressure in the arms: the left 86/70; the right, 200/100. The pulse in the left wrist was barely palpable, the right easily palpable. The femoral pulse of the right could not be detected; the left was barely palpable. There was no pulse in the popliteal artery on either side. The legs were cyanotic, and the muscles were very hard. Both lower extremities were cold and clammy and numb. Both extremities in the lower portion seemed to be slightly swollen. Neither lower extremity could be moved voluntarily.

**Neurologic Examination.**—The twelve pairs of cranial nerves, including a funduscopic examination, did not reveal any evidence of abnormality. Both of his arms were strong and did not show any muscular weakness, despite the difference between the blood pressure in right and left arms. The reflexes were present and equal, and sensation in all modalities was normal. The abdominal reflexes were absent bilaterally.

The right leg was flaccid and did not show any femoral pulse. It was mottled in appearance and both the patellar and Achilles reflexes were absent. All of the toe signs were negative. The left leg was very rigid but there was a very feeble femoral pulse. The rigidity was so great that the reflexes could not be elicited. The toe signs in the left leg were negative.

There was complete anesthesia to cotton, pin-prick, pain, vibratory sense and position sense in both lower extremities and this level of anesthesia extended up to the umbilicus. From the umbilicus to approximately the rib margin, there was a partial anesthesia. The patient had an atonic bladder and was unable to void.

**Laboratory Data.**—On admission, the urine was normal, except for a faint trace of albumin, an occasional white cell and a few hyaline casts. The blood showed: hemoglobin, 14.2 grams; leukocytes, 11,600; neutrophils, 86 per cent; lymphocytes, 14 per cent; sedimentation rate, 25 millimeters in one hour. The serum amylase was 57 milligrams per cent.

Subsequent laboratory examinations on June 11 showed no significant changes. The blood urea nitrogen was 22.

Urinalysis, June 11, showed hemoglobin and red blood cells in the urine, 400 cells per high-powered field. Guaiac tests run on this urine were 4 plus. The blood Wasserman was negative.

An electrocardiogram was taken on admission and reported as follows:

"Slight STV-1, 2, 3, 4 elevation. High, peaked TV-3, 4. Negative TV-1. This is within normal limits. The changes in the V-1 occasionally seen as only findings in infarction. If clinically indicated, suggest serial tracings."

Another electrocardiogram was taken on the following day and was reported as follows:

"Changes since 6/10/52 are increased rate and height

## CASE REPORT

or depth of all T-waves. The tracing is normal except for tachycardia."

**X-Ray Reports.**—Radiograph of the abdomen, taken June 10, failed to show abnormality in the kidney or bladder regions, but evidence of excessive gas in the stomach and intestines was present.

Radiograph of the chest, taken June 10, showed some ectasia of the aorta and a heart shadow suggesting a left ventricular type.

**Course in Hospital.**—The condition of the patient went rapidly downhill. His pain was controlled with 15 milligram doses of morphine and 100 milligram doses of demerol. His pulse became weak and feeble; respirations rapid and shallow. He expired approximately 9:30 p.m. on June 11, 1952, about thirty-six hours after admission.

**Autopsy Findings.**—Gross examination of the aorta revealed a large mass within the wall of the vessel, 3 centimeters in diameter, in the area of the left subclavian branch, and another in the lower third of the aorta. Incisions of these masses showed them to be filled with clotted blood. The root of the aorta was thin-walled and showed, 1.5 centimeters above the aortic valve, a transverse rent in the intima which measured 4 centimeters in length. This communicated with a dissecting aneurysm which extended the entire length of the aorta and ended abruptly with the bifurcation of the common iliac artery. It was possible to push a blunt probe through this rent in the root of the aorta into the region of the left subclavian mass. There was a communication in the form of a longitudinal dissection running from 1.5 centimeters distal to the aortic valve down through the two aforementioned masses to the iliac arteries and forming a cuff around them. Microscopic studies revealed medial necrosis of the aorta. The remainder of the autopsy was noncontributory.

### Differential Diagnosis

The differential diagnosis included hematomyelia, thrombosis of the anterior vertebral artery, infectious myelitis, and dissecting aneurysm. The patient had no history of an acute infection, being in relatively good health, and the onset of his difficulty was quite sudden. The blood pressure difference between the right and left arms made us feel that the most likely diagnosis was one of secondary damage due to vascular changes in the spinal cord from a dissecting aneurysm rather than any primary pathology in the vascular supply to the spinal cord itself.

The combination of neurological and vascular abnormalities narrowed the diagnostic possibilities. Myocardial infarction seemed unlikely in view of the normal electrocardiogram and the acute onset of the neurological abnormalities. A pre-existing luetic aneurysm was considered as a basis for the vascular abnormalities, but the chest x-ray did not reveal any evidence of any aneurysm of the thoracic aorta.

For these reasons, the diagnosis of dissecting aneurysm of the aorta was made. The pain arising in the chest, subsequently in the back, and the development of the paralysis of the lower extremities seemed to make this diagnosis more tenable than any other. The age and the patient's antecedent hypertension also were compatible with this diagnosis.

The upper half of the spinal cord is supplied by the anterior and posterior spinal arteries which arise from the vertebral artery and anastomose up and down the cord. It also has a good blood supply from above the level of the fifth cervical vertebra down from the lateral spinal arteries which arise from the subclavian artery. The middle section of the cord has a rather poor blood supply, and the middle section as well as the lower half receives its blood supply from the intercostal, the lumbar arteries, and the internal iliacs, all of which arise from the thoracic and abdominal aorta.

If the loss in strength, disturbed sensation and the lost reflexes in the lower extremities were due to an ischemic

damage or necrosis of the peripheral nerves in the legs secondary to occlusion of the femoral arteries, there would of course not be any changes in the abdomen, and the bladder should be functioning properly. Because of the loss of abdominal reflexes, the loss of sensation extending completely to the umbilicus and partially to the rib margins, and the loss of bladder function, it was felt that the damage was probably due to the dissection of an aneurysm separating the layers of the aorta and disturbing the blood supply throughout the spinal cord from approximately the eighth thoracic vertebra down.

### Discussion

Shennan's review, in 1934, stimulated the modern interest in dissecting aneurysm of the aorta. He studied the world's literature at that time. Of 300 cases reported, only six had been diagnosed ante mortem. In 1937, White described the experience at the Massachusetts General Hospital and commented upon the rarity of the diagnosis and further stated that an increased awareness of this condition would undoubtedly lead to additional cases being diagnosed ante mortem. In 1947, White again reviewed the case experience at the Massachusetts General Hospital and found that the diagnosis had been made much more frequently during this ten-year period than it had been at the time of his earlier report. He ascribed this to an increased suspicion of this condition prior to the death of the patient. Weisman and Adams in 1944 reviewed the neurological complications attending a dissecting aneurysm as observed at the Massachusetts General Hospital. It is interesting to note that prior to 1944 in only two cases had the pathology of the spinal cord been studied. They described the various neurological manifestations of this condition. Scott, in 1948, found that of 424 cases of dissecting aneurysm which had appeared in the world literature and were suitable for analysis, 21 per cent had neurological abnormalities.

As early as 1937, White commented upon the fact that a surgical approach could be feasible under certain conditions. More recently, because of the advances in vascular surgery, it has been thought that in some cases in which the outcome might be otherwise fatal a surgical approach might be successful. If this should prove feasible the importance of diagnosis would be accentuated.

Medical therapy has little to offer a patient of this kind; however, an occasional patient does survive the acute attack. It is estimated that the duration of life following the acute episode is about five days and the mortality is in the neighborhood of about 90 per cent.

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# History of Medicine In Minnesota

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## MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE  
Granite Falls, Minnesota

The County of Yellow Medicine lies in the central southwestern part of the State of Minnesota. It is a long, narrow county, shaped somewhat like a hammer, with the head embedded in Redwood County and the handle extending westward to the South Dakota line. Upon its northern boundary lie the Counties of Lac qui Parle and Chippewa; on the south are Redwood, Lyon, and Lincoln Counties, and its eastern boundary is the Minnesota River.

From east to west the county measures at its greatest length fifty-four miles, and at its greatest width twenty-one miles. Within its confines lies an area of land and water, rolling prairie and wooded valleys, totalling 763.12 square miles.

The waters which drain from this area in creeks and rivers flow in a northerly or northeasterly direction to discharge into the Minnesota River. In the western townships the Lac qui Parle River, as sparsely wooded as the lake for which it is named, winds almost directly northward. Florida and Canby creeks empty into it. The Yellow Medicine River rises in the southwestern highlands to flow in a generally northeasterly direction almost the entire length of the county, gathering in its course Spring Creek and other streams which run bank-full in spring, and dwindle through the hot, dry summer months. Beginning as a prairie river, treeless and smiling, the Yellow Medicine follows a valley which gradually widens and deepens and becomes quite heavily timbered for the last fifteen miles of its journey toward the Sky-Blue-Water.

In the northeastern corner of the county a small stream appropriately called Stony Run loops in and out at the foot of the bluffs which edge the Minnesota Valley. Below this creek a small stream heads in the Minnesota River, and serves as a spillway for seasonal floodwaters as it flows southward in a wide curve to rejoin the river below Granite Falls. Still further south, Hazel Creek flows through a deeply eroded and beautifully wooded channel to empty into the Minnesota.

There are no large lakes in the county, but ponds and sloughs are plentiful on the table lands above the Minnesota Valley. Trees grow only in the protected places where water collects, or along the river, for the rainfall of the area is insufficient, and the prevailing westerly winds are too arid, for the development of natural timber. Groves have been planted for windbreaks but the trees do not grow to great size.

The Minnesota Valley at this point presents to the incoming traveler a panorama of extraordinary beauty. Coming suddenly to the edge of the table land he sees the steep descent as the land drops away to form a valley which is from 130 to 175 feet deep, and from one and a half to two miles wide. In it, blue in the distance, meanders the river. Falling over an old divide at Granite Falls, it foams up whitely around the great blocks of granite cast in its bed by some ancient volcanic disturbance; then spreading out into quiet water it narrows again to pass between

grey granite promontories which bear the marks of glacial action. At Minnesota Falls it drops over another old divide in a fall of fifteen feet, making a total descent of ninety feet in less than two miles.

Upon the valley floor areas of granite outcroppings alternate with bottom lands of rich black soil. The glacial waters of the ancient River Warren, which once filled this valley from bluff to bluff, cut deeply into the glacial till and exposed the bedrock which here and there thrusts up through a thin crust of earth. Trees fringe the river banks, creep up the hillsides, and even rock ledges give root-hold to fern and honeysuckle, wild plum, thorn apple and wild grape.

At its deepest point the valley is 835 feet above sea level. The table land which spreads westward from it reaches an elevation of 1737 feet above sea level as the rolling prairie gives way to the more hilly terrain of the region called Antelope Hills, near the South Dakota line.

The name Yellow Medicine has reference to the moonseed (*menispermum canadense*), a plant valued by the Indians for its medicinal qualities. From the long, slender, bitter root of this plant came the yellow medicine which, according to legend, was sought by an Indian maiden to cure the sickness of a great chief. The moonseed grows in other parts of the state, but its presence in the thickets bordering the Yellow Medicine seems to have been the distinguishing characteristic of the river. The first white men knew the place by its Indian name, Pehijutazi, and its English equivalent appears upon the earliest maps of the country.

Indian villages flourished in the wooded valley of the Yellow Medicine, for it was a favorite camping place; quantities of arrow heads and pottery shards found in the vicinity indicate that there were villages here, and even today the Indian village three miles south of Granite Falls bears the name Pehijutazi among its own residents.

The names given to the twenty-one townships of the county reflect the history or topography of the country, and the national origins of the settlers who named them. The three fractional townships bordering the Minnesota River are Stony Run, Minnesota Falls, and Sioux Agency, which are descriptive and historical names. The four townships running diagonally parallel to them are Lisbon, Hazel Run, Wood Lake and Echo. Friendship, Sandnes and Posen, which complete the hammer head, were and are predominantly Norwegian. Next are Tyro and Normania, Omro, Swede Prairie (named for the first four Swedish families settling there); then Oshkosh, Burton, Hammer, Wergeland, Norman, Florida and Fortier. The last-named three townships have always had a somewhat larger percentage of non-Scandinavian inhabitants. Fortier was named for Joseph Fortier, one of the first settlers and also the first sheriff of the County.

The recorded history of Yellow Medicine County properly begins in 1851, for in that year the forces were set in motion which were to make the region historically notable. It might also be said that those forces were given impetus still earlier, when the end of the war of 1812 set people moving westward in search of new homes; or with the financial crisis of 1837 which caused more prospective settlers to look toward the free lands of the west in the hope of recouping lost fortunes. And there can be no question but that the rivalry between the new cities of the middle west, Chicago and St. Louis, for the advantage of being the railroad center from which lines would creep westward, also had some influence; for the Chicago proponents had to face the hard fact that lines running west from that city must pass through Indian territory unless the tribes could be shifted to some other region.

All these forces merged and became vocal in the clamour for more lands for

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white settlement. In 1849 the only portion of the state open to settlement was the area purchased from the Indians through the negotiations of Zebulon Pike. The region which was to become Yellow Medicine County was inhabited by the fierce and warlike Sisseton and Wahpeton tribes of the Sioux with the Wahpekutes and Mdewakantons to the east and south. All the lands south of the Minnesota River were claimed by the Sioux, and to the north were the Chippewas, their ancient enemies. Sporadic warfare went on between the tribes, for how was a young warrior to win a feather for his headdress except by killing an enemy? It was therefore not a region favorable to exploration, although access to it could be gained by way of the Minnesota River.

Some historians believe that Baron de la Hontan ascended the Minnesota River in the winter of 1688-89. If this is correct, then de la Hontan would have passed along the eastern border of the county, and been forced by the nature of the terrain to pass through some part of it. But the weight of opinion is that de la Hontan's "Long River" was not the Minnesota; and although fur trappers and traders, French-Indian voyageurs and *couriers des bois* must have gone up and down the river and across the prairie, no white man left a record of such a journey, until the nineteenth century was well on its way.

The first white men known to have made use of the inland waterway, and therefore to have at least touched upon Yellow Medicine County, were members of the Selkirk Colony and officers of the Hudson's Bay fur trading company, who in 1819 made a journey up the Red River of the North, the Bois des Sioux River, to Lake Traverse, across the divide to Big Stone Lake, and thence down the Minnesota River to its mouth. Their purpose was to buy seed for the Colony at Pembina, where the crop of the previous year had been destroyed by grasshoppers; and Prairie du Chien was the nearest source of supply. It is of record that the party touched at Fort Snelling both going down and passing up the river. In April, 1819, they reached Prairie du Chien, purchased wheat, oats, peas, and some chickens, and loaded it all on a boat (some say a flat boat, others "three Mackinaw boats manned by six hands each"); and began the long journey back to Pembina. In ascending the Minnesota they would have had the advantage of spring floodwaters, but could not avoid portaging around the falls at Minnesota Falls and Granite Falls, and so would have been the first white men known to have been even briefly in Yellow Medicine County.

The first exploration of the upper Minnesota Valley was made by Major Stephen S. Long, who in 1825 was ordered by the government to explore "the St. Peters to its source." In the summer of that year Major Long headed an expedition composed of twenty soldiers from the fort, a geologist, an artist, and other observers, and proceeded up the Minnesota, half the party going by water and half by land. Again the need to portage around the falls would have brought white men into Yellow Medicine County. Still later, Major Sumter's military expedition to impress the Indians doubtless passed through some part of the county.

The first white men actually to settle in the territory passed through it in 1835 on their way to the Lac qui Parle region, but eventually they were to return and become the first residents of the county. In the spring of that year Dr. Thomas S. Williamson arrived at Fort Snelling with a missionary party, in search of a place to establish a mission in Indian territory. The question of where to go was answered by Joseph Renville.

This rather remarkable descendant of an early French adventurer had long been useful to government. He had served the English as a captain in the forces at their northern posts; and when the United States belatedly asserted claim to

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the great northwest territory Renville transferred his allegiance to the government. He served as guide, and interpreter to Major Long's expedition, for on his mother's side he was of the Sioux and he had married an Indian woman of that tribe. He was one of the voyageurs and couriers de bois who played a colorful part in the early history of the country. By 1835 he was the owner of a trading post at Lac qui Parle, and father of a numerous brood of Indian children for whom he wished to provide religious instruction. With this purpose in mind he offered the missionaries his help and protection in building a mission near his post.

So on June 22 the missionary party set out from Fort Snelling in the fur company's Mackinaw boat for the first part of their journey. At Traverse des Sioux they transferred to Renville's Red River ox carts and traveled overland the rest of the way. At Lac qui Parle they lived for a year within Renville's stockade, then moved into the mission built on the north bank of the Minnesota River. From this point they carried on missionary work throughout the territory.

One of the first acts of the first territorial legislature of the newly created Minnesota Territory was to demand the purchase of more lands from the Indians. As a result messengers were sent to the tribes of the Upper Sioux requesting them to attend a conference at Traverse Des Sioux in the summer of 1850. Although the Upper Sioux were believed to be more amenable to persuasion, they were reluctant to part with their remaining lands, and only a few responded. But the idea persisted, and in the summer of 1851 the tribes were finally gathered together at the meeting place for a treaty conference, in the course of which they reluctantly agreed to part with all their lands in Minnesota except a strip ten miles wide on each side of the Minnesota River from the mouth of the Yellow Medicine to Lake Traverse, which was to be and remain "forever" their reservation. Later, following their example, the tribes of the Lower Sioux sold their lands also, retaining a similar strip of land from New Ulm to the mouth of the Yellow Medicine.

The southern boundary line of the lands reserved to the tribes of the Upper Sioux passed diagonally through the present townships of Echo, Wood Lake, Hazel Run and Lisbon, which was the part of Yellow Medicine County most accessible for settlement.

The price to be paid for the lands was a little more than a million and a half dollars, or about twelve and a half cents an acre; and for convenience in making the payments which were to cover a period of fifty years, and furnishing certain services designed to improve, educate, and civilize the Indians, two agencies were to be set up within the reservation. One was to be at Redwood, and the other at Pehijutazi.

Two men who were familiar with the territory attended this conference: the Rev. Stephen R. Riggs and Dr. Thomas S. Williamson. At this time Rev. Riggs was in charge of the Lac qui Parle mission and Dr. Williamson was at Kaposia, Little Crow's Village, to which he had been invited in 1846. Kaposia was located just below the present site of Saint Paul, and since the Indians living there would have to move westward onto the new reservation Dr. Williamson immediately began to plan for a new mission at the Upper Sioux Agency at Pehijutazi.

In the summer of 1852 Dr. Williamson went to Pehijutazi and there began the construction of a home for his family. It is eminently fitting that a county named for a medicinal plant should have had a medical man for its first resident.

Dr. Williamson had been born into a family with a tradition of service in the church, but he had first chosen medicine as his field of endeavor. He had begun

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his medical practice in Ripley, Ohio, married one of the belles of that city, Miss Mary Poage, and built up a good practice. But as the years passed the conviction grew upon him that his mission in life should be to serve God and mankind through the church, and he began the training which led to his ordination as a minister of the Presbyterian church and a missionary of the American Board of Missions.

In this way Dr. Thomas S. Williamson became the first resident of Yellow Medicine County and the first doctor to practice there; for according to the Rev. Mr. Riggs, Dr. Williamson's ministry and his medical skill went always "hand in hand" throughout his long life. While the Indians did not readily give up their traditional tribal practices and medicines, they were willing to let the doctor try his skill along with their own medicine men. Dr. Williamson was a skilled physician and a man of deep natural piety; his sympathy for the Indians was sincere and he never failed them.

The winter of 1852-53 was a severe one. The Williamson family suffered, almost starved, in their new home at Pehijutazi. But in the summer crews began work on the buildings for the Agency, choosing a site upon the bluffs overlooking the Minnesota River, about a mile from the mouth of the Yellow Medicine River. The logs used for construction of the first Agency buildings were felled in the timber along the Yellow Medicine, and later a portable sawmill was erected on this river.

The first Agency officials arrived at Pehijutazi in the summer of 1854, and with them came the Agency doctor, Dr. Jared Waldo Daniels, whose brother Asa Wilder Daniels served in the same capacity at the Lower Sioux Agency. Late in the summer the Rev. Stephen Return Riggs also came to establish a new mission. Joseph Renville's death was followed by the burning of the mission; so the Rev. Riggs put his household goods on a boat at Lac qui Parle and came down river to establish his own mission at Hazelwood, on Hazel Creek.

Up to this time medical practice in Yellow Medicine County had been entirely in accordance with the Indian tradition. It consisted of the use in various ways of medicinal herbs gathered and dispensed by the women and the medicine men, potions brewed of plant, animal, and insect life, chants, charms, and superstitions. Yet after the manner of all primitive peoples, they had discovered some remedies for common ills. It is suggested that many white settlers, far from medical aid, made use of such Indian remedies, and lives were saved by them.

Dr. Williamson's route of travel to the territory in 1835 had been overland to Galena, Illinois, then by steamboat up the Mississippi to Fort Snelling. By 1854 the railroad line had reached Madison, Wisconsin, and in 1857 the Milwaukee and Mississippi Railroad was able to advertise a train service from Chicago and Milwaukee to Prairie du Chien, where it connected with "a new and superior line of steam packets, under the control of the Milwaukee & Mississippi Railroad, on the Upper Mississippi River to Saint Paul, Minnesota, and all intervening points, with stages to all points of Northern Iowa. Lands in Iowa and Wisconsin were being settled, and settlers from those states were moving northward into southern Minnesota. But the part of Yellow Medicine County which was open to settlement was still too far west, and too near the Indian country, to be desirable for settlement.

In these years the Upper Sioux Agency grew in extent and power, and became the capital of all the Indian country. The tribes gathered there to receive annuity payments, to draw upon the store of food supplies, and secure other benefits due them under the terms of the treaty. The Indians were encouraged to place their children in the government school, or in the Missionary school, and avail themselves of the doctor's services, for the white man's diseases were already mak-

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ing inroads upon the tribes. It was the policy of government to civilize the Indians and persuade them of the advantages of the white man's way of life. As an inducement they were given building materials if they wished to build houses, and were offered instruction in farming methods. Some twenty "farmer Indians" settled down near the agency, acquired cattle, and farmed with fair success.

The houses which the Indians built were described by Mr. Knute Glaim, an early settler who spent the winter of 1866 in an Indian house, as follows:

"Those houses, built of brick made from clay on what is now the Ingval Imes farm, were enclosed by one row of solid brick. As soon as the weather got cold the frost would form on the inside of the brick walls, and by mid-winter that coating of frost would be more than an inch thick. It was just like living in a refrigerator. It was no wonder the Indians moved out of them." (From an interview reported in the *Granite Falls Tribune*, February 18, 1949.)

The brick of which such houses, and other buildings at the agency, were made, was manufactured at the brick yards on the Yellow Medicine to augment the dwindling supply of timber for construction purposes. The first log buildings of the Agency were all replaced by buildings of frame or brick construction. The brick yards continued in operation until about 1886.

The farmer Indian soon found that farming was not profitable, for after working all summer while his brother "blanket Indians" lived more joyously by hunting and fishing, he would have a store of food put by, but as soon as the blanket Indians ran out of food they descended upon him and literally ate him out of house and home. The community system of living was traditional, and it continues in this locality to this day, the greatest single barrier to individual Indian progress.

By 1860 the Upper Sioux Agency buildings spread for half a mile along the bluffs above the Minnesota River. Dr. Williamson's mission included many buildings, and the Riggs mission on Hazel Creek was one of the largest and best equipped of all the Indian missions. Rev. Riggs essayed to teach the Indians something about government as well as religion; the Republic of Hazelwood had its own officers.

In that eventful year the new Republican party succeeded in electing Abraham Lincoln President, and a change of administration brought a change of officers at the Upper Sioux Agency. Agent Brown was replaced by Agent T. J. Galbraith, an official who came to be cordially disliked by the Indians. In the spring of 1861 Sumter was fired upon, and Dr. Daniels resigned his post in the hope of being assigned to a regiment going south. After a few months he was appointed Assistant Surgeon to the Sixth Minnesota, but he did not go south. He was to see all of his military service in the north and northwest against the Indian tribes.

The Agency of this period has been described for us by a writer quoted in Rose's History of Yellow Medicine County:

"On the bluffs, about 40 rods east from the Agent's house, was the government warehouse, built of brick and two stories high. In the rear, T. J. Galbraith's rooms. A little north Dr. Wakefield's residence, northwest the boss carpenter's residence, a large two-story brick building. East from our boarding house was Mr. Givens' the second agent's house, and also the house of Noah Sinks, the clerk. A mile or so away the Yellow Medicine flowed into the Minnesota River. There was timber on both streams and some on the bluffs north of the Agency. The government buildings stood on the high bluffs, one side extending and spreading out on the prairie westward. (Parker I. Pierce, in "Antelope Bill.")

Soon after Lincoln's inauguration an emissary of government assured the Indians that they would receive an additional "very rich" gift in the fall of 1861. In expectation of this the tribes came down in the fall, only to learn that the promised gift had not arrived. They waited there, while the hunting season passed, drawing

upon the food stores of the Agency. When the shipment finally came snow was deep on the ground, the hunting season was past, and no food had been laid by for the winter. The "very rich" gift turned out to be only \$10,000 worth of goods, or about \$2.50 per Indian. Since the Indians had no food laid by they remained at the Agency, subsisting on the supplies doled out to them.

When the next payment came due in July four thousand Indians assembled at the Agency to receive their annuities. By that time the Agency supplies were almost exhausted. The rainfall had been scant, and prospects of raising corn in the little squaw patches were poor. Again the shipment was delayed, and there was much grumbling and open show of dissatisfaction over what the Indians regarded as repeated failure to fulfill the terms of the treaty. The tribes had learned by this time that they could not live solely by hunting and fishing on the lands they had left; they had become increasingly dependent upon the white man's pork and flour, which must be paid for in coin, or produce, or furs. As the weeks passed there was actual hunger among the tribes. Their credit was cut off at the stores, and many differences arose. Once more the Soldiers' Lodge, a secret order organized only for the hunt or for war, came into existence.

There were grievances of long standing, but the sum of it all was that the Indian at last realized the hopelessness of his situation.

On August 18, 1862 this discontent exploded into action. A few Indians in search of liquor touched off the uprising of 1862 when they turned upon the settlers in the little village of Acton and massacred its entire population. They then fled to the villages of the Lower Sioux and a council of war was held. Although some Indians were reluctant, all agreed that now "their hands were bloody," and they had no choice but to try to drive the white man out of their valley.

News of this decision traveled swiftly to the mission and the Agency borne by friendly Indians (some of them Renville's descendents). Under cover of darkness the people of the Riggs mission escaped to an island in the river where they spent the night. Dr. Williamson delayed, sending his young people ahead. Dr. Wakefield was away from the Agency with the Agent, and his wife took matters into her own hands. Setting out with her children on foot for Redwood, she was overtaken and picked up by a young man driving a horse and buggy. Unwittingly they were going toward the danger, and before they could reach Redwood the young man was killed and Mrs. Wakefield and children taken captive.

At the Agency Dr. Wakefield, unaware of this development, took refuge with the twenty-two men and forty children and women who remained there in the government warehouse which was "built of brick and two stories high." They had little in the way of guns and ammunition, but fortunately the Indians busied themselves first with looting and burning the stores. In the early morning hours John Other Day and other friendly Indians secured a team and wagon, and helped the refugees to escape across the river. The wounded and small children rode in the wagon while the rest of the party walked behind. In this manner they made their careful way to Fort Ridgely, which they found under seige. St. Peter was also under seige, but shortly after they had passed it was liberated by troops from the fort, so Dr. Wakefield turned back there to assist in caring for the wounded. The others made their way to Fort Snelling.

During the uprising battles were fought up and down the valley, with varying degrees of success, but the decisive battle of the Sioux war was fought at Wood Lake in Yellow Medicine County. The uprising lasted for six weeks and cost, according to Dr. Williamson's estimate, the lives of 312 settlers. Eleven lives were lost at the Agency. At the conclusion of hostilities the white captives were released and Mrs. Wakefield and children were reunited with the doctor.

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After the uprising the rights of the Indians under the treaty were declared forfeit as to the lands of their reservation, and all who were suspected of taking part in it were rounded up and imprisoned.

In the makeshift prisons at Mankato and Fort Snelling the Indians were crowded together under the worst possible conditions. Food was scanty and of poor quality; confinement in close quarters led to sickness, and to make matters worse the women and children of the prisoners followed the menfolk and had to be provided for. Dr. Williamson and his son, the Rev. John Williamson, worked tirelessly with the Indians and for them, writing many letters to the President setting forth evidence of extenuating circumstances in particular cases, while week after week the court martial sifted evidence. In the end the court martial pronounced sentence of death upon four hundred Indians.

With characteristic thoroughness President Lincoln himself examined the evidence and reduced the number sentenced to death to thirty-nine. The condemned Indians were executed at Mankato; the others were transported to their new reservation in the west in the summer of 1863. Loaded upon steamboats, they were taken down the Mississippi and up the Missouri to Crow Creek. The Rev. John S. Williamson has written this account of the journey:

"The mortality was fearful. The shock, the anxiety, the confinement, the pitiable diet, were naturally followed by sickness. Many died at Fort Snelling. The steamboat trip of over one month under some circumstances might have been a benefit to their health, but when thirteen hundred Indians were crowded like slaves on the boiler and hurricane decks of a single boat, and fed on musty hard tack and briny pork which they had not half a chance to cook, diseases were bred which made fearful havoc during the hot months, and the 1,300 souls that landed at Crow Creek June 1, 1863, decreased to 1,000. So the hills were soon covered with graves."

All of Yellow Medicine County was now open to settlement, but for three years no white settler came to live in the region. Indian and white alike shunned the scene of bloodshed, and the ruined buildings lay undisturbed.

At the end of the Civil War there was the shift in population which is the aftermath of all wars, and new settlers flowed in upon the middle western states. "Uncle Sam is rich enough to give us all a farm" was the popular song, and literally true. The Homestead Act of 1859 made taking up of claims to land little more than a formality. Its purpose was simply to hasten the settlement of the territory. As the population increased the nine counties established by the first legislature had been divided and subdivided, and in 1865 Redwood County was created, and embraced within its borders all the territory from its present eastern line to the South Dakota border.

When the first settlers came to what is now Yellow Medicine County it was a part of Redwood County. They came in the summer of 1865, civil war veterans and settlers who had located in the southeastern counties for a few years on their westward trek. John Winter had come from Canada to locate briefly at LeSueur; Benjamin F. Saunders was a veteran; George E. Olds had brought his family from Massachusetts, settling in Olmsted County. He had worked in railroad construction as a surveyor, and for most of his life combined this calling with farming. Joseph Fortier had been in the region as a clerk for Myricks Store at the Agency, and there were also George S. Johnson and D. P. Lister, veterans of the Civil War, and Hiram Hodgkin, brother-in-law of George E. Olds, who came in 1865.

*(To be continued in the July issue)*

# President's Letter

## A DIFFICULT DECISION

It may come as a shock to members of the Minnesota State Medical Association to learn that a special assessment was voted by the House of Delegates to furnish a fund to undertake care of our indigent members. This action was taken in Saint Paul at the 100th Anniversary meeting of the Association, and delegates from the county medical societies took the matter under serious consideration before acting.

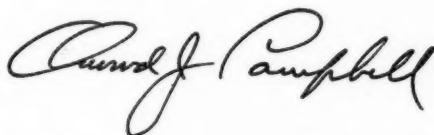
It is probable that the House of Delegates experienced the same sense of shock when they learned that not enough funds were secured by voluntary subscription to make an adequate start in caring for our indigent. You will recall that this voluntary project was begun as a result of House of Delegates action at the 1951 annual meeting.

Naturally, there is some doubt in the minds of those attending the House of Delegates session, whether the action was wise, but it probably will do no harm if doctors understand the purpose and if the fund can stand as a single assessment, after which voluntary subscriptions can be resumed.

It should be emphasized that this action was taken by the House of Delegates, representatives to which are elected by each county medical society in the Association. The prevailing feeling seemed to be that the delegates regretted the necessity of taking such drastic action, but that the worthiness of the fund and previous unsatisfactory results required quick and decisive action.

Admittedly, this project can be a thorny subject. The Council, directed by the House to work out details, has appointed a committee to make a quick study and evaluation of the problem, and to discover the best means of utilizing the monies raised.

The final plan which the committee evolves may not be perfect and may require revision as experience dictates, but I am sure there will be little or no dissension from the guiding principle—that medicine can and will take care of its own needy members.



*President, Minnesota State Medical Association*

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## THE STATE MEETING

THE CENTENNIAL meeting of the Minnesota State Medical Association in Saint Paul in May fulfilled expectations for an outstanding meeting in celebration of the 100th anniversary.

Registration figures showed 1907 physicians; 410 nurses, dietitians, technicians, social workers and medical secretaries; 159 scientific exhibitors; 536 commercial exhibitors; 544 Woman's Auxiliary members and 836 guests (total 4,392).

Dr. Justus Ohage of Saint Paul was chosen president-elect and will serve as president in 1954. He is the son of the late Dr. Justus Ohage of Saint Paul who also served as president of the State Association in 1895. It is interesting to note that the only other combination of father and son to serve as presidents of the State Association were Dr. W. W. Mayo, president in 1873 and his sons, Dr. W. J. Mayo, president in 1894 and Dr. Charles H. Mayo, in 1906.

Other officers chosen were Dr. Paul C. Leck of Austin, first vice president and Dr. Vernon D. E. Smith of Saint Paul, second vice president. Dr. B. B. Souster of Saint Paul and Dr. W. A. Condit of Minneapolis were re-elected secretary and treasurer, respectively. Dr. C. G. Sheppard of Hutchinson was re-elected speaker of the House of Delegates and Dr. Haddon Carryer of Rochester was re-elected vice speaker.

District councilors elected were: Dr. J. M. Stickney, Rochester, First District; Dr. R. C. Hunt, Fairmont, Second District (re-elected); Dr. A. O. Swenson, Duluth, Third District (re-elected).

Drs. F. J. Elias, Duluth, O. J. Campbell, Minneapolis, and George A. Earl, Saint Paul, were all re-elected delegates to the American Medical Association.

The State Association meeting in 1954 will be held in Duluth and in 1955 in Minneapolis.

At the annual banquet which was attended by about 500 members and guests, some nineteen members were admitted to the Fifty Club, limited to those who have practiced fifty years. They

were Drs. William F. Braasch, Rochester; Charles F. Brigham, and Richard O. Julian, St. Cloud; John J. Catlin, Buffalo; Theodore L. Chapman and Olin W. Rowe, Duluth; Don F. Fitzgerald, Wayzata; John H. Higgins, Harry G. Irvine, Henry W. Noth, Anton G. Wethall, Minneapolis; Joseph A. Poirier, Forest Lake; Auvigne M. Randall, Ashby; Stella L. Wilkinson and Frederick C. Schuldt, Saint Paul, and Benedik Melby, Blooming Prairie.

Also, announced at the banquet was the awarding of a distinguished service medal to Dr. Julian F. DuBois of Sauk Center, secretary of the Minnesota State Board of Medical Examiners since 1935, past president of the Federation of State Medical Boards in 1942 and president of the American College of Physicians and Surgeons in 1947, and elected a member of the National Board of Medical Examiners in 1950. Unfortunately, Dr. DuBois was unable to be present to receive the award. Dr. Carl B. Drake, Saint Paul, was also awarded the Association's distinguished service medal for his labors as editor of MINNESOTA MEDICINE for the past thirty-four years.

The award for the best scientific exhibit tendered each year by the Southern Minnesota Medical Association went this year to Drs. J. J. Wild and John Reid of the Department of Electrical Engineering of the University of Minnesota for their exhibit entitled "Echographic Cancer Diagnosis." Honorable mention went to Dr. Kinsey M. Simonton of the Mayo Clinic for his exhibit entitled "Surgical Management of Chronic Mastoiditis."

The Art and Hobby Show displayed nearly 200 entries and attracted much interest. The Popularity Award went to a portrait of "A Lady" by Dr. Alex Ratelle, it having received the greatest number of votes by visitors.

Among the water colors, first prize went to "Log Cabin" by Dr. Daniel De Gallier; second prize to "St. Catherine College Chapel" by Dr. Andrew Christiansen; and third prize to "Vermont Hills" by Dr. Samuel F. Haines.

In the oils, first prize went to "Winter Wonder-

land" by Dr. J. Benepe; second prize to "White River, Bad Lands" by Dr. James H. Crowley; and third prize to "Flood Waters" by Luisa Kerschbaumer.

In photography, first prize went to "Sunwapta Valley" by Dr. John P. Wendland; second prize to "Smiling Girl" by Leonard Arling; and third prize to "The Shop" by F. H. Walter.

The centenary meeting has passed into history. A summary of the meeting would not be complete without mention being made of at least a few of the noted out-of-state visitors who added so much to the program. Dr. Richard R. Trail, of London, head of the Papworth and Enham-Alamein rehabilitation centers for the tuberculous in England, was the St. Joseph's Hospital Centennial Lecturer and addressed six medical organizations in the Twin Cities during his brief stay. He proved himself an authority in his specialty of chest diseases. Since the meeting, Dr. Trail has been awarded the honorary title of Commander of the British Empire. Sir Alexander Fleming, director of St. Mary's Wright Fleming Institute of London, who also took part in the St. Joseph's Hospital centenary celebration, spoke with authority on the subject of penicillin. Dr. Alton Ochsner, chairman of the department of surgery at Tulane University, is as outstanding a clinical teacher as any surgeon in the country and contributed two fine addresses to the program. These addresses, as well as those presented by the other outstanding visitors and Association members, will appear in MINNESOTA MEDICINE beginning with the August issue.

## INFLUENZA AND PNEUMONIA

**L**ITTLE progress has been made so far in the treatment and prevention of influenza. Even the differential diagnosis of influenza from influenza complicated by a pneumonia, from lobar pneumonia, or from an acute respiratory infection, is often difficult. The classification by life insurance companies of influenza and pneumonia under one heading as a cause of death seems therefore reasonable.

Influenza and pneumonia still constitute an important cause of death, being the third in importance, cardiovascular disease being first, and cancer second. Though the death rate from influenza and pneumonia has dropped nearly three-fourths since 1936, and a half during the past eight years, there were 51,000 deaths from this

cause in 1951. With the advent of the sulfas fifteen years ago the death rate from influenza and pneumonia began to decline. This decline continued with the discovery of the antibiotics. How much these two drugs benefit in influenza is debatable. We doubt whether they are of any service in the treatment of influenza itself but believe their administration is justifiable for the purpose of preventing a complicating pneumonia.

Influenza occurs each year more often in the winter and early spring, three-fifths of the deaths from this disease occurring in the first five months, from December through April each year. The mortality is much higher in males forty-five years of age and over than in females of a similar age, and is particularly severe in infancy and old age. Those with chronic diseases are more likely to succumb to influenza and pneumonia than otherwise healthy individuals. This fact is confirmed by studies made by the Public Health Service which show an increase in deaths from all causes other than influenza and pneumonia in the weeks which show an excess mortality for these two causes.

It would be too much to expect a 100 per cent cure of pneumonia by any drug. Marvelous as the results are in pneumonia from the administration of the antibiotics many instances are encountered in which they prove futile. The development of resistance to certain antibiotics on the part of certain bacteria is given as the explanation of such failures and the reason for refraining from prescribing an antibiotic for each and every infection, or danger of infection, which is the present-day vogue.

One interesting development in the study of influenza epidemics is the establishment of a world-wide network of influenza laboratories and a world influenza center in London for a compilation of information as to the influenza virus strains responsible for epidemics in various parts of the world. This is one of the worth-while activities of the World Health Organization. Another reference laboratory in New York, known as the Strain Study Center for the Americas, is doing the same recording for the Americas. Epidemics due to the same influenza virus strain occurring in Africa or Australia in May have been followed to London in January. The establishment of these regional laboratories should prove of value in designating the proper vaccine for use in a certain locality. One of the reasons for frequent failure in the vaccination program for influenza

has been need for the use of vaccines for specific strains of the influenza virus.

The influenza epidemic which was widespread not only in America but in central Europe, Hawaii and the Philippines, in January and February of this year was due to virus A prime and was fortunately comparatively mild. The epidemic of 1918 with its terrific mortality has not been forgotten. Nor has it been completely explained. It is not known how effective the sulfas and antibiotics would be in combatting a return of such an epidemic. The severity of an epidemic depends on the virulence of the specific influenza virus strain responsible and the degree and prevalence of immunity which may be present in the community as a result of previous recent epidemics due to the same virus strain. One discouraging factor is that immunity resulting from either infection or vaccination is not long lasting.

It would seem that as a result of the establishment of influenza laboratories it will be possible to designate the particular influenza virus responsible for any specific epidemic and the particular vaccine which should be used. The development of a longer lasting vaccine seems highly desirable.

#### THE DEAN'S PAGE

Beginning with the June number of MINNESOTA MEDICINE will appear a short article on some phase of the University of Minnesota Medical School which will be supplied by Dean Diehl's office. This monthly article will provide a contact between the Dean's office and the medical profession of the State. It is the wish of the profession to co-operate in every way with our medical school and it is just as true that the medical school wishes to foster close relationship with the medical profession. The article which will appear each month in MINNESOTA MEDICINE should further mutual understanding between the medical school and the medical profession of the state.

#### WORLD MEDICAL ASSOCIATION

THOSE who do not know of what the World Medical Association is composed and what its purposes are can get a clear idea from a reading of the President's Page in the April 25, 1953, number of the JAMA. We venture the opinion that not one in ten of our members knows the difference between the World Health Organization and the World Medical Association.

The World Health Organization, a branch of the United Nations, represents the governments of the world and is supported entirely by government funds. The World Medical Association, on the other hand, is a medical association composed of the national medical associations of forty-three different nations. No medical associations of countries behind the iron curtain are included. It is supported entirely by dues paid by the member associations and voluntary contributions and is independent of government and politics. Whereas, the AMA is made up of component state medical associations, the World Medical Association is made up of component national medical associations.

It is fortunate that we have members of our national medical association with breadth of vision and the energy to devote their time and talents not only to the problems of medicine in county, state and nation but in the world at large. Medical men like Dr. Louis H. Bauer, president this year of the AMA, and Dr. Elmer Henderson, past president, have each served as officers of the World Medical Association concomitantly with their tenure in their AMA offices, the former as secretary general and the latter as president. The scientific interests of the medical professions of all countries are similar although problems differ. The World Medical Association can speak for 700,000 physicians throughout most of the world and should possess authority.

The aims of the World Medical Association, according to Dr. Bauer, are: "To effect a better liaison among the doctors of the world; to serve as a forum for discussion of mutual problems; to disseminate information; to raise the standards of health, medical education and medical care throughout the world; to represent the practicing profession before other international bodies, when matters of health and medicine are discussed; and to give the average doctor a voice in international affairs; and to improve international relations."

One matter in which the World Medical Association served a most useful purpose was in the publicity it gave to the machinations of the International Labor Organization, editorial mention of which was made in our September, 1952, number.† As a result, Senator Bricker of Ohio has submitted a bill to Congress which will forestall

†Editorial: Back door entrance. Minnesota Med., 35:823 (Sept.) 1952.

the adoption of foreign ideologies by the mere majority vote of the United States Senate.

Medical societies and individuals cannot join the World Medical Association directly. However, in the United States a World Medical Association United States Committee, Inc., has been established and can be joined by individuals, medical societies and business organizations. In this issue (page 653) appears a full-page advertisement, which we are happy to donate to the World Medical Association in order to further its altruistic purposes.

#### ARMED FORCES DISCOUNT REPORTS ON HEPATITIS RATE

Following press reports of high incidence of homologous serum jaundice (hepatitis) among U. S. troops getting plasma, the Armed Forces Medical Policy Council and Army Surgeon General's office decided the record should be set straight. These points were made: (a) Studies show that 23 per cent of the severely wounded receiving 5 to 10 units of plasma contract hepatitis from 60 to 180 days after the infusions, but mortality rate is only one in 1,000 cases, (b) while serum albumin has been found free of hepatitis virus, there isn't enough supply to replace plasma, (c) A National Research Council committee is working on sterilization of plasma but until it arrives at a solution, plasma will continue to be used by the services. Officials said they were anxious that the public not stop donating blood because of the misinformation on plasma.—*A.M.A. Washington Letter No. 7.*

#### ERADICATION OF TUBERCULOSIS

We have talked about the eradication of tuberculosis as if within a reasonable period that phenomenal condition might become an actuality. It might be well for us to drop this word and think more in terms of possible control. Even though a specific cure or a specific vaccine might be found, it would require generations to discover the last infected person. We look with much pride on the fact that today less than one-half of one per cent of dairy herds in this country are infected. The control program was started in 1916. Its basic features were tuberculin testing, slaughtering of infected animals and, finally, prohibiting the addition of new animals to the herd unless they were tuberculin negative. Thus, for many years this ideal, controlled program has resulted in eliminating the majority of infected cattle before clinical disease has developed and has thereby sharply reduced the chance for spread of infection. Nevertheless, despite these heroic efforts, the significant fact remains that there still exists small reservoirs of infection in our herds. The veterinarian is ever vigilant in his program, for the slightest neglect has again and again proved that, where the tubercle bacillus exists, it can flare into a consuming flame.—*H. R. EDWARDS, M.D., The Am. Review of TB, March, 1952.*

JUNE, 1953

## Minnesota Department of Health

#### REPORTING OF ALL DEATHS DUE TO OR ASSOCIATED WITH PREGNANCY

Since July 20, 1951, the State Board of Health has required the reporting of all deaths of women due directly to pregnancy or the puerperium as well as all female deaths where pregnancy was present but was not the cause of death and the postpartum period for three months following delivery. This does not include stillbirths or infant deaths.

The regulation is quoted below for the information and guidance of physicians and hospitals.

*Reg. 125.* Any death associated with pregnancy (including abortion and extra-uterine pregnancy) or the puerperium (for a period of three months' postpartum), whether or not it is the actual cause of death, will be reported to the Minnesota Department of Health, Division of Maternal and Child Health by mail within three days after such date, by the attending physician and by the hospital where the death occurs.

The following information will be included in the report:

Name and address of woman

Date of death Age at death

Cause of death

Name of attending physician and address

Name of hospital and address

The above report is in addition to the usual report by death certificate to the Division of Vital Statistics as now required by law.

#### RELATIONSHIP BETWEEN DISEASE AND SOCIAL FACTORS

More field studies are needed to establish quantitative relationships between disease and social factors such as age, race, sex, occupation, and economic status. These factors and their impact on community disease patterns are our counterparts of the clinicians' measurement of pulse, blood pressure, basal metabolic rate, etc., in the individual. They, and their relationship to disease and health deserve more attention than we have afforded them.—*BERWYN F. MATTISON, M.D., American J. of Pub. Health, Dec., 1952.*

# The Dean's Page

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In response to a long standing and oft repeated invitation of the Editorial Board of MINNESOTA MEDICINE, the administration and faculty of the Medical School will utilize a page of this journal each month to inform the physicians of the state about the policies, activities, plans, and problems of the school. To be able to do this is a privilege for which the Medical School is deeply appreciative.

It is common knowledge that the standards of medical practice and the over-all reputation of the medical profession in an area are determined to a great extent by the quality and the reputation of the medical school serving that area. Consequently, the maintenance of high quality medical education has always been of deep concern to individual physicians as well as to the American Medical Association and its constituent state and county societies.

As I pointed out in my discussion of "Medical Schools and Medical Education over the Past Century" (MINNESOTA MEDICINE, April, 1953), medical schools of today are vastly more complex and are expected to meet demands and responsibilities more far-reaching than ever before. Even during the years of my own connection with the University of Minnesota Medical School, beginning as a medical student in 1914 and as a member of the staff in 1920, the quality, the tempo, and the standing of this institution have been completely changed.

The primary purpose of our Medical School is today, as it has always been, the training of general physicians to provide the best of medical care for the people of this area. Changes in the subject matter and methods of instruction have occurred and will continue to be made whenever improvement seems possible.

In graduate medical education for the training of specialists and in continuation medical education for physicians in practice great developments have occurred. Even more dramatic have been the advances in medical research.

It is with all of these developments that we are anxious to acquaint the physicians of the state. The Medical School wants and needs your interest, your understanding, and your support. We hope that this series of articles will contribute toward that end.

HAROLD S. DIEHL  
*Dean, Medical School,  
University of Minnesota*

# Medical Economics

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Edited by the Committee on Medical Economics  
of the  
Minnesota State Medical Association  
George Earl, M.D., Chairman

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## ASSOCIATION DUES ARE COMPARATIVELY SMALL

Active members of county, state and national organized medicine may not realize the low figure their dues amount to when compared to those of the cultists.

Minnesota, for instance, has state dues of officially \$40 per year, with national dues amounting to only \$25 per year and county dues varying somewhat around those two figures. This should be critically compared with the dues charged of chiropractors in some parts of the country. The Indiana Federation of Chiropractors collects \$240 a year from each member. This figure is quoted in the April issue of *Medical Economics* which also has this to say about the utilization of that money:

"Most of the money goes to support the manifold promotional activities of the trade; some is spent to help extricate individual members from legal entanglements.

"There's no escaping the fact that the chiropractic associations do a highly effective job in terms of service to members. If their energy, shrewdness, money and devotion were used in a better cause, the M.D. would have to give them his unstinting admiration."

*Medical Economics* puts its conclusion in the form of a warning to medical practitioners:

"As it is, in these days of booming practices, some medical men shrug off the chiropractor as a minor nuisance; they dismiss his doctrine as a joke. In doing so, they lose sight of the implication in many a patient's tombstone epitaph: that there's nothing funny about dying."

## SOCIAL SECURITY SURVEY TERMED HARD TASK

One of the greatest tasks undertaken by the Eisenhower administration is a thorough overhaul of our colossal system of social security "from the cradle to the grave." This statement was made by Arthur Sears Henning in a series of articles

quoted in a recent issue of *Insurance Economics Surveys*.

Mr. Henning traces the rapid growth of the social security system:

"In less than two decades the system has grown until it represents 26 billion dollars in reserve funds (17 billion in old age insurance, 9 in unemployment insurance), with approximately 17 million beneficiaries who in 1952 received payments aggregating nearly 9 billion dollars. Of these beneficiaries more than 4 million were retired aged employees and their dependents who received more than 1½ billion dollars in benefits."

## Increases Cause Action

According to the article, many changes and increases in economic considerations are the basis for administration action to overhaul the system. It is feared that an estimated 20 million old age beneficiaries receiving 13 billion dollars in benefits annually fifty years from now, and a trust fund of 106 billion dollars and payroll taxes doubled, this will have a damaging effect on the nation's economic structure.

A congressional inquiry into the system's operation under the previous administration has already been initiated. Representative Curtis of Nebraska heads this subcommittee of the house ways and means committee. One of the fields of inquiry will be "whether social security has been developed under the New Deal into a guarantee of a scale of living that for many people destroys the incentive for thrift, encourages shiftlessness and cultivates the attitude that 'the world owes me a living.'"

## Twenty-Five Programs Now Operating

The report states that there are now approximately twenty-five public social insurance programs maintained by the federal, state and local governments throughout America. In 1952, there were more than 17 million beneficiaries of these programs who received pensions and other benefits aggregating \$8,799,066,000. The author states:

"Public social security on the national scale was born of the depression. Theretofore care of the destitute was universally considered the function of local government. Provision of economic safeguards against old age, sickness and death was not regarded a proper responsibility of government, least of all the national government. Security was an end to be attained by the individual through hard work and thrift within the framework of private enterprise."

"With the advent of the depression and increasing unemployment in the thirties, however," the report goes on, "tremendous pressure for the nationalization of relief developed. Roosevelt, who accurately sensed the political value of relief dispensation, swept aside the Hoover plan of state and local relief with federal financial aid and took over the job for Washington."

#### ILO Had Hand in Development

It is interesting to note that the International Labor Organization, the group which has lately fostered the advance of socialized medicine through international treaties, was actively supporting social insurance during its infancy.

Mr. Henning states: "By this time the international labor organization, an adjunct of the League of Nations dominated by foreign socialists, was spreading the gospel of social insurance along the lines of the contributory system which Bismarck borrowed from the German socialists as a means of defeating the liberal movement. The ILO thinkers proclaimed it the responsibility of the government to provide social security for the individual and to adopt such coercive measures as might be necessary to discharge this obligation."

#### FIGURES SHOW INCREASE IN LIVES SAVED

Rapid advances in medical science, steady rise in the general standard of living and improved safety measures were credited for an increase in lives saved since 1945.

A recent statistical bulletin from the Metropolitan Life Insurance Company states: "There were about 200,000 fewer deaths in our country in 1950 than would have occurred if the death rate of 1945 had continued unchanged. This is an outstanding achievement in life conservation for so brief a period. . . ."

The report goes on to state that if the mortality of 1945 by age, sex, and color had prevailed in

1950, the year would have seen almost 1,657,000 deaths, in place of the 1,452,454 actually recorded.

Decreases in mortality rates were broken down into specific diseases and other causes, and the bulletin notes:

"This large gain in a single year reflects the decline in mortality from many diseases and various types of injury. However, most of the saving in lives is accounted for by a relatively few causes of death. . . ."

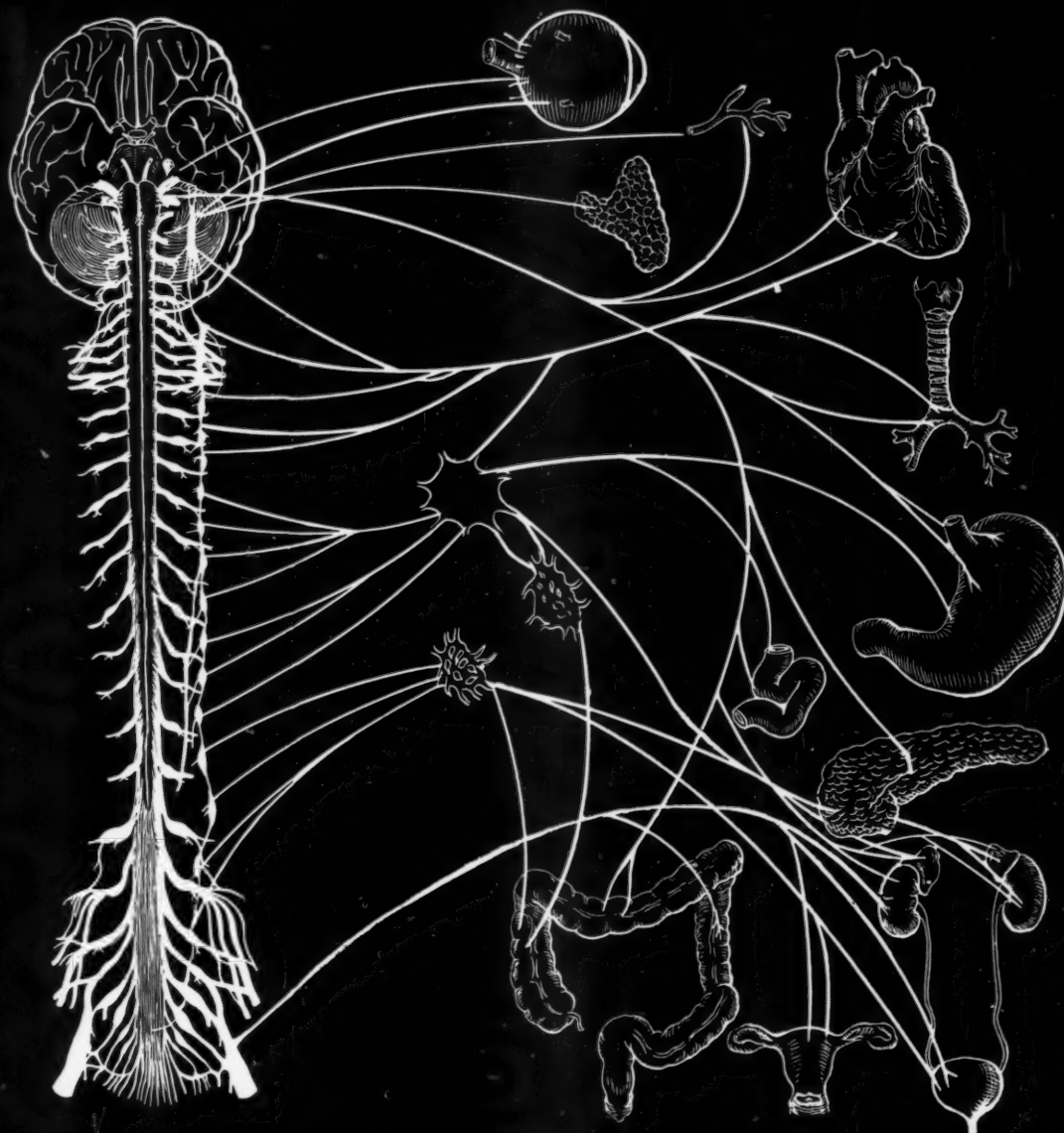
#### Cardiovascular Heads List

According to the bulletin, the diseases in the cardiovascular-renal field headed the list for number of lives saved. Surprisingly, the report stated, "instead of the 720,603 deaths from these conditions in our country in 1950, there would have been 771,614 such deaths, if mortality had continued at the 1945 level. Thus, the actual deaths were about 51,000 less than the expected. This saving from the cardiovascular-renal diseases amounts to one quarter of the total saving in lives, and results for the most part from the reduction in mortality among women."

Significant changes in progress in communicable diseases was emphasized by the report:

"Rapid progress in the control of the communicable diseases since 1945 has contributed substantially to savings in current mortality. Without this improvement there would have been at least 25,000 additional deaths from pneumonia and influenza among us in 1950 and almost the same number more from tuberculosis. The magnitude of these savings is even more striking when related to the actual number of deaths recorded for 1950. Thus, under the situation five years earlier there would have been over 50 per cent more deaths from pneumonia and almost 75 per cent more deaths from tuberculosis."

Again, this increase in the number of lives saved, puts added emphasis on the problem of geriatrics. More and more older people in the population are a constant challenge to medicine. In this respect, the House of Delegates of the Minnesota State Medical Association, in annual session in St. Paul on May 18, took steps to aid its own members who have reached the age where they are no longer able to earn a productive living. Doctors, too, have found themselves a part of this increase in the older population. The House of Delegates voted to create a Physicians' Assistance Fund, with every member an active supporter. The fund's details will be worked out by the Council of the Association, to be put into effect at the earliest possible date.



Excess neural stimulation over the parasympathetic subdivision plays an important role in such clinical conditions as peptic ulcer, certain forms of gastritis, pylorospasm, pancreatitis, spastic colon, bladder spasm and hyperhidrosis.

## The Standard of Therapy in Peptic Ulcer

**Banthine®** Bromide (brand of methantheline bromide) is a true anticholinergic which inhibits parasympathetic stimuli, acting selectively on the gastrointestinal and genitourinary systems. It exerts little or no influence on the normal cardiovascular system. Banthine is supplied in oral and parenteral dosage forms.



RESEARCH IN THE SERVICE OF MEDICINE

**S E A R L E**

## ◆ Reports and Announcements ◆

### **COURSE IN MEDICAL USES OF ISOTOPES**

The Special Training Division of the Oak Ridge Institute of Nuclear Studies has scheduled an advanced course covering the clinical applications of radioisotopes to be held from September 14-25, 1953. This advanced course, part of the continuing series offered by the Institute, is the second to be concerned with the medical uses of isotopes. The first was given in March, 1951.

Participation will be limited essentially to those physicians who have had clinical experience with radioisotopes.

Subjects to be discussed in the course include tumor localization, circulatory volumes and outputs, fluid and electrolyte spaces, therapy of blood diseases, theory of radiation dosimetry, radioactivity measurement, gold-198 and other colloids, interstitial and surface applications, teletherapy, iodine-131 in diagnosis and therapy, and external counting.

The course will consist of lectures, clinics, and exhibits of equipment. Speakers have been selected from among the leaders in the specific fields of interest.

Additional information and application blanks may be obtained from the Special Training Division of the Institute, P.O. Box 117, Oak Ridge, Tennessee.

### **SURGERY RESEARCH SCHOLARSHIPS AVAILABLE**

The American College of Surgeons has established a research scholarship in surgery to be available for one who is in the last months of a residency training program. It will supply for the chosen candidate \$20,000 over a period of three years. Candidates must receive the approval of the chairman of the department of surgery, the dean of the same medical school, and the authority of the executive office of the university making the proposal. The medical school supporting the nomination will be required to provide a satisfactory place to work as well as funds with which to supply necessary research. Inquiries may be addressed to The Research Scholarship Committee, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

### **INSTITUTE ON ESOPHAGEAL SPEECH**

An Institute on teaching and improving esophageal speech will be held in Cleveland, Ohio, August 10 through 16 at the Cleveland Hearing and Speech Center. This Institute, the second one on Voice Pathology, is being sponsored by the American Cancer Society, National Cancer Institute of Institutes of Health, the Office of Vocational Rehabilitation, the Cleveland Otolaryngological Society, the Cleveland Academy of Medicine and the Western Reserve University School of Medicine.

Nationally known surgeons, speech pathologists and lay teachers of esophageal speech will conduct lectures, demonstrations and supervise practice in teaching esophageal speech; fluoroscopic views will be used to facilitate studies of the physiology of esophageal speech.

Non-speaking laryngectomized persons are invited to attend without charge. They may be sent by surgeons,

cancer societies, societies for crippled persons and rehabilitation services.

Surgeons, speech pathologists and lay persons are invited to attend the sessions. Limited registration is necessary. Application must be mailed by July 15 to Warren H. Gardner, Ph.D., Program Chairman, 11206 Euclid Avenue, Cleveland 6, Ohio.

### **PAN-PACIFIC SURGICAL ASSOCIATION**

Doctors are urged to make arrangements as soon as possible to attend the Sixth Pan-Pacific Surgical Congress to be held in Honolulu, Hawaii, October 7-18, 1954.

An outstanding program, including sessions in all divisions of surgery and related fields, promises to be of interest to all doctors.

The Association office has been appointed as travel agent for those attending the Congress and it is important that all hotel and travel reservations be made through the Honolulu headquarters of the Pan-Pacific Surgical Association.

For further information, please write to F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 7, Young Hotel Building, Honolulu, Hawaii.

### **MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY**

The Minnesota Society of Neurology and Psychiatry met May 2, at St. Mary's Hospital in Rochester. The scientific program included a "Symposium on Depth Electrography," presented by: Dr. H. W. Dodge, Jr., Technician; Dr. C. B. Holman, X-Ray Aspects; Dr. Gerd Fischer, Histological Aspects; Dr. E. A. Rodin, Normal Rhythms, Including Sleep; Dr. R. G. Bickford, Olfactory Response to Electrical Stimulation and Schizophrenia; Dr. A. A. Bailey, Focal Epilepsy; Dr. W. McK. Craig, Neurosurgical Assessment; and Dr. Howard P. Rome, Psychiatric Assessment.

Dr. Howard Gaudin of Auckland, New Zealand, spoke on "Socialized Medicine in New Zealand," at the afternoon session.

### **UNIVERSITY OF MINNESOTA MEDICAL SCHOOL CHANGES REQUIREMENTS**

University of Minnesota medical students will no longer be required to complete a year's internship for the doctor of medicine degree. The new ruling was approved May 8 by the Board of Regents.

The move is in keeping with a general trend to abolish the requirement. Following the start of World War II, medical schools throughout the country dropped the practice. Only four still retain the "extra year."

Almost forty years ago, the University of Minnesota was the first school to establish the requirement of an internship. This action was taken to give internship recognition as an essential part of a physician's training and to discourage graduates of the medical school from entering practice without it.

Although the requirement is no longer necessary at

*(Continued on Page 646)*



## Relaxed but awake

In emotional and nervous disorders, Mebaral exerts its calming influence without excessive hypnotic action.

Mebaral is also a reliable anticonvulsant.

### INDICATIONS:

Because of its high degree of sedative effectiveness, Mebaral finds a great field of usefulness in the regulation of agitated, depressed or anxiety states, as well as in convulsive disturbances. Specific disorders in which the calming influence of Mebaral is indicated include neuroses, mild psychoses, nervous symptoms of the menopause, hypertension, hyperthyroidism and epilepsy.

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## REPORTS AND ANNOUNCEMENTS

### UNIVERSITY OF MINNESOTA MEDICAL SCHOOL CHANGES REQUIREMENTS

(Continued from Page 644)

Minnesota, Dr. Harold S. Diehl, head of the medical school, stated, "It is unthinkable that a graduate of our medical school today would enter practice without having an internship. The internship is now universally recognized as an essential part of medical education. In fact, most states require an internship for licensure and all special fields of medical practice require an internship as preliminary to specialty training."

### WANGENSTEEN EDUCATION FOUNDATION ESTABLISHED

An Owen H. Wangenstein Surgical Education Foundation—honoring Dr. Owen H. Wangenstein, chief of the department of surgery—has been established at the University of Minnesota. The foundation was approved by the University's Board of Regents at their May meeting.

Initial funds to set up the Foundation were donated by Dr. F. John Lewis, associate professor of surgery; Dr. Richard L. Varco, professor of surgery, and Dr. Charles E. Rea, clinical associate professor of surgery. Purpose of the foundation is to promote advanced surgical education.

Dr. Wangenstein will act as an adviser in administration of the funds.

### SENIOR CLASS LUNCHEON

The Minnesota Medical Alumni Association held a luncheon for the Senior class of the Medical School on Wednesday, May 27, at 12:30 p.m. in the Junior Ballroom of Coffman Memorial Union. An alumnus or a member of the Medical School faculty acted as host to each Senior student. The program following the luncheon included a brief outline of the objectives of the Medical Alumni Association and a short talk by Dr. E. T. Bell, Emeritus Professor of Pathology.

### NURSE SCHOLARSHIPS AVAILABLE

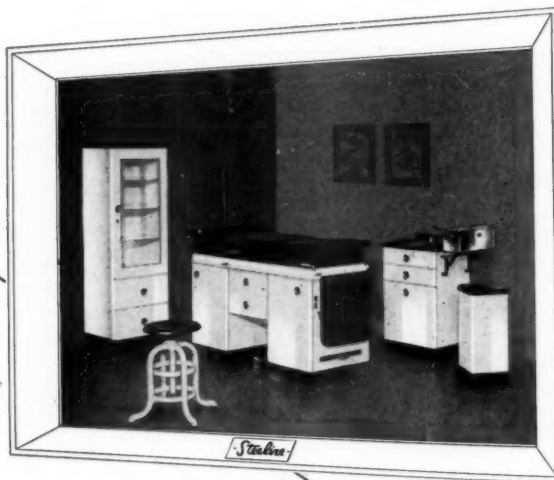
The 1953 Minnesota legislature has set aside \$75,000 for each year of the new biennium as a scholarship fund for the field of nursing. The scholarships are available to individuals with ability to complete the program of nursing education but who could not do so without financial aid.

Two types of scholarships are available: a maximum grant of \$600 may be awarded for a student attending a professional nurse's school, and a maximum grant of \$300 is available for the field of practical nursing. Requirements are that the individual must first be accepted by an accredited school of nursing (professional or practical) in Minnesota; that the student must agree to accept an educational experience in a rural hospital or a state hospital for the mentally ill as part of her education, and the student must agree to practice nursing for at least one year in Minnesota following graduation. Information may be had by writing the State Department of Education, State Office Building, Saint Paul 1, Minnesota.

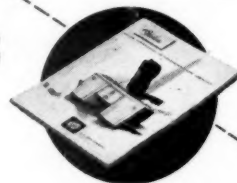


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L. H. Ashe, Manager  
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# Woman's Auxiliary

## ANNUAL MEETING WELL ATTENDED

Mrs. Charles Waas

Mrs. W. H. Von Der Weyer

Attendance at the 31st annual meeting of the Woman's Auxiliary to the Minnesota State Medical Association was exceptional this year. About 300 doctors' wives attended the convention in Saint Paul, May 18, 19 and 20.

All events during the meeting brought Auxiliary members from all parts of the state. Attendance at the Executive Board meeting and luncheon on Monday was about fifty; at the annual meeting and luncheon on Tuesday it was nearly 200; and at the breakfast on Wednesday it was about 40.

Officers elected for the coming year at the annual meeting on Tuesday are: President, Mrs. Henry W. Quist, Sr., Minneapolis; President-Elect, Mrs. P. S. Rudie, Duluth; First Vice President, Mrs. C. L. Oppegard, Crookston; Second Vice President, Mrs. Andrew Christiansen, Saint Paul; Third Vice President, Mrs. L. P. Howell, Rochester; Fourth Vice President, Mrs. O. J. Campbell, Minneapolis; Recording Secretary, Mrs. David Halpern, Brewster; Corresponding Secretary, Mrs. L. J. Leonard, Minneapolis; Treasurer, Mrs. C. W. Froats, Saint Paul; Auditor, Mrs. John K. Butler, Cloquet; Parliamentarian, Mrs. Leo Fink, Minneapolis.

Special tribute was paid to Mrs. S. S. Hesselgrave, who has terminated her long successful career as parliamentarian of the Auxiliary. It was with great regret that the Auxiliary accepted Mrs. Hesselgrave's resignation. Her long years of service have provided a lasting contribution to the Auxiliary's work.

Grateful thanks are extended to all committee chairmen for their excellent arrangements for annual meeting events. Without their valuable expenditure of time and effort, the meeting would not have been the success that it was. Visitors from all parts of the state expressed appreciation for the lovely appointments at all social functions, also for the fine reception they were given by those responsible for making them welcome.

The committee and the hostess auxiliary would also like to extend thanks and appreciation for the entire

membership to the newspapers in Minnesota which did such a commendable job of covering the meeting events.

It is sincerely hoped that all Auxiliary members who attended this year's convention gained valuable information to take back to their local auxiliaries. Their presence is deeply appreciated, for without their active participation in all Auxiliary functions, Auxiliary work would be much less effective. The Auxiliary looks forward each year to having more and more doctors' wives attend all meetings, thereby making their membership more valuable to themselves, as well as to the Auxiliary as an organization.

## AUXILIARY EXPRESSES THANKS

Mrs. M. I. Hauge, Clarkfield

Today's Health Chairman

Again this year, as in several years past, the Minnesota State Medical Association, in the name of the Woman's Auxiliary to the Minnesota State Medical Association, has given each of the 191 Minnesota legislators a year's subscription to *Today's Health*.

The Woman's Auxiliary would like to take this opportunity to thank a wise medical association for placing *Today's Health* with a law-making group who will become aware of the friendship and concern that the American Medical Association has for the health and welfare of the people in Minnesota.

## CONQUEST OF TUBERCULOSIS

The conquest of tuberculosis in our country will be expedited by concentrating on those measures which have been most productive in the past decades. These are early case finding, prompt and adequate treatment, including the newer surgical procedures, and effective medical follow-up and rehabilitation of arrested cases. Vigorous efforts along these lines are absolutely essential not only for the welfare of those with the disease but also for the protection of those who might otherwise become infected. The detection and isolation of infectious cases are the most effective curbs to the spread of the disease.—LOUIS I. DUBLIN, "A 40-Year Campaign Against Tuberculosis," *Metropolitan Life Insurance Company*, 1952.

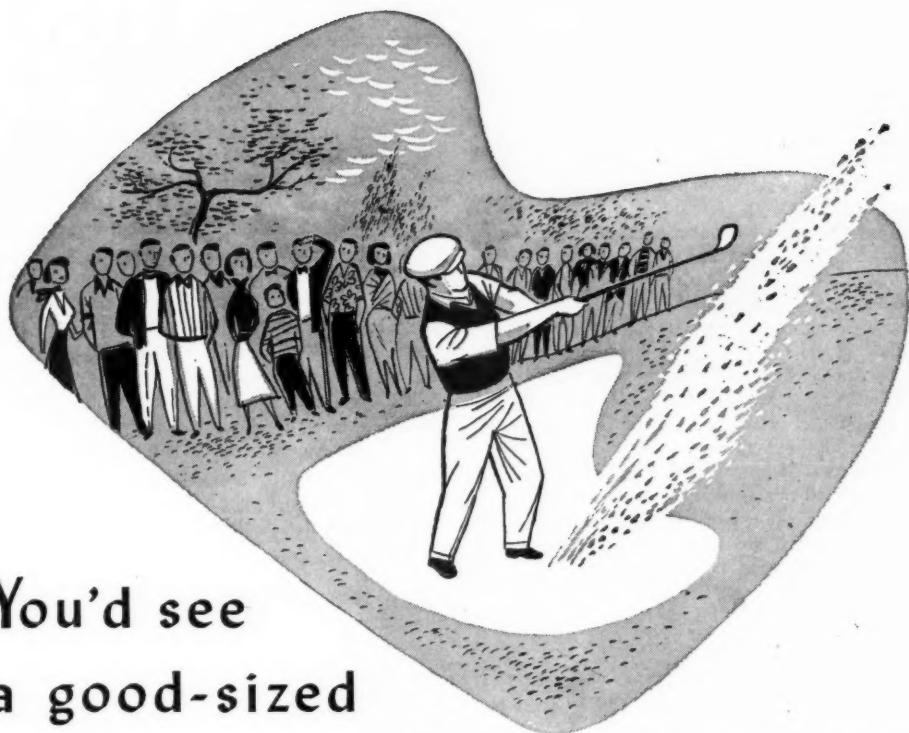


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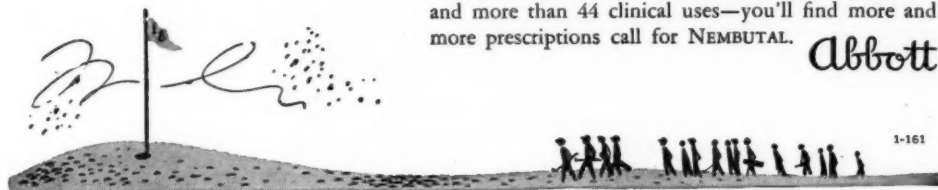
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## In Memoriam

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### OLIVER R. BRYANT

Dr. Oliver R. Bryant, Minneapolis, died on his way from Inglewood, California, to his summer home at Cross Lake, on May 18, 1953. He was seventy-three years old.

Dr. Bryant was born December 1, 1879, in Rochester, Minnesota. He obtained his M.D. degree from the University of Minnesota in 1905.

He was in private practice in Minneapolis for twenty-five years and was chief medical officer of the Minnesota Soldiers Home for ten years. He was also on the staff of the Anoka State Hospital for five years.

Dr. Bryant was a Mason. He served with the 5th Minnesota Regiment in the Spanish American War and was a member of the Arthur MacArthur Post of Spanish War Veterans. He was an active sportsman and participated in fund-raising ventures to provide grain for the wildlife during the winter. He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Bryant is survived by his wife, Hazel, and a son, John R., of Dallas, Texas.

### J. E. CORRIGAN

Dr. J. E. Corrigan, a former pioneer physician and surgeon at Spooner, Minnesota, died March 30, 1953, at the home of his son Jack, at Excelsior, Minnesota. He was about eighty-six years old.

Dr. Corrigan was a graduate of the New York University Medical School in 1892.

After living in Spooner a number of years, Dr. Corrigan built a hospital (now the Pioneer Home) and carried on an active practice until he moved to Minneapolis about fifteen years ago and retired from practice.

Dr. Corrigan was a member of the Upper Mississippi Valley Medical Society, the Minnesota State Medical Association and the American Medical Association. He became a life member of the Minnesota State Medical Association in 1938.

### WILLIAM FREDERICK CARL HEISE

Dr. W. F. C. Heise, founder of the Heise Clinic in Winona, died on May 29, 1953, at his home after an illness of several weeks.

Dr. Heise was born in Fountain City, Wisconsin, October 1, 1874. His long career witnessed and took part in the development of modern medicine and surgery. Graduating from Rush Medical College, Chicago, in 1896, he spent two years as an intern at the Presbyterian Hospital in Chicago. After practicing a short period in a small iron mining town in Michigan, he moved to Winona in 1898.

Dr. Heise had his five sons associated with him in his clinic. His oldest son, Herbert, is a graduate of Jefferson Medical College and specializes in surgery; William, a graduate of Northwestern, is a pediatrician;

Philip, a graduate from the University of Arkansas, specializes in obstetrics and gynecology; Paul, a graduate from Marquette, is both surgeon and pathologist; Carl, a graduate of Jefferson, takes care of ear, nose and throat diseases. A portrait of the family hangs in the library of the American College of Surgeons in Chicago in view of the unique group of a family of six practicing together. Of further interest is the fact that Dr. Heise's brother, Dr. Carl A. Heise of Missouri Valley, Iowa, has two sons and two daughters who are physicians and one daughter who is a nurse.

Dr. Heise was a member of the Winona County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was a fellow of the American College of Surgeons.

He is survived by his widow, five sons, three daughters: Mrs. John Curtis of Winona and the Misses Ruth and Adele Heise, both teachers in Minneapolis.

### GALEN K. SELLERS

Dr. Galen K. Sellers, Dassel, Minnesota, who had practiced medicine there since 1937, suddenly died of a coronary thrombosis on April 18, 1953. He was fifty-six years of age at the time of his death. Dr. Sellers was born in Bangor, Maine, on May 15, 1896, a son of the late Dr. and Mrs. Harry H. Sellers. In 1914 the Sellers family moved to Minneapolis, Minnesota.

He received his early education in Bangor, Maine, and in 1916 was graduated from the Shattuck Military Academy in Faribault, Minnesota. He served with the Armed Forces during World War I after which he began his pre-medical studies at the University of Minnesota and at the University of North Dakota. He received his medical degree from the University of Illinois in 1928 and served a year of internship at the Swedish Hospital in Minneapolis, completing his internship in 1929. From 1929 to 1931 he practiced medicine at Deer River, Minnesota, and from 1931 to 1937 at Motley, Minnesota. Since 1937 he had practiced medicine at Dassel, Minnesota, and at the time of his death was Chief of Staff at the Meeker County Memorial Hospital in Litchfield, Minnesota.

Dr. Sellers was a member of the Kandiyohi, Swift, Meeker County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was a member of the American Legion and was always interested and active in local affairs.

Survivors include his wife, Ada L. Sellers, and two sons, Galen and Robert, of Dassel, and a sister, Mrs. Burrell Laraway of Minneapolis, Minnesota.

Dr. Sellers was an able and conscientious doctor and was always a credit to the medical profession. He had a likeable and pleasant personality and will be sadly missed by all who knew him.

(Continued on Page 652)

# Cordelia

## AWARD WINNING BRASSIERES!

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Rochester —  
C. F. Massey Co.  
Peggy's Uniform Shop

Saint Paul —  
The Golden Rule

Virginia — Jarmin's, Inc.

## IN MEMORIAM

(Continued from Page 650)

### ROBERT F. WERNER

Dr. Robert F. Werner, formerly of International Falls, died in Los Angeles, California, April 29, 1953. He practiced in Nevada City, California, from 1927 to 1932, in International Falls from 1933 to 1941, and in Minneapolis in 1942 before moving to California.

Dr. Werner was born at Center City, Minnesota, and graduated from the University of Minnesota Medical School in 1921.

Surviving are his wife, Elizabeth, and a son Robert, both of St. Paul.

### WILLIAM FRANKLIN WILSON

Dr. William F. Wilson, a practitioner at Lake City, Minnesota, since 1893, died suddenly of a heart attack on May 29, 1953. He was eighty-eight years old.

Dr. Wilson was born in Jamaica, West Indies, October 5, 1864. He attended the medical department of Northwestern University, where he graduated in 1897. He took further study at Chicago Post Graduate School in 1899 and at New York Post Graduate in 1901. He acted as resident physician at the Minnesota School and Hospital for the Feeble Minded at Faribault from 1901 to 1904.

Dr. Wilson was secretary of the Wabasha County Medical Society continuously from 1896 until his death, except for one year when he served as president of the Society. He was automatically a member of the Minne-

sota State Medical Association and the American Medical Association.

Dr. Wilson served as a member of the United States Board of Pension Examiners. He was president of the Public Library Board from 1906 for many years.

Dr. Wilson is survived by a son, Arthur.

Tuberculosis is characteristically slow and insidious in its onset. A disease which has early and dramatic symptoms and makes its victims seek medical advice at once does not present the same difficulties of control as does a disease like tuberculosis. ROBERT J. ANDERSON, M.D., *Medical Papers of the Annual Meeting of the Canadian Tuberculosis Association*, May, 1951.



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Operating Room in Hospital.....	10.00	20.00	30.00	40.00
Anesthetic in Hospital.....	10.00	20.00	30.00	40.00
X-Ray in Hospital.....	10.00	20.00	30.00	40.00
Medicines in Hospital.....	10.00	20.00	30.00	40.00
Ambulance to or from Hospital.....	10.00	20.00	30.00	40.00
<b>COSTS (Quarterly)</b>				
Adult .....	2.50	5.00	7.50	10.00
Child to age 19.....	1.50	3.00	4.50	6.00
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## ◆ Of General Interest ◆

**Dr. J. Arthur Myers**, professor of medicine and public health at the University of Minnesota, was the principal speaker at the Lyon County accreditation program, held April 20, in Marshall. To earn tuberculosis accreditation, Lyon County has met the two requirements—a low tuberculosis death rate, average of less than ten per 100,000 population annually for five years, and a low infection rate which is "sampled" by tuberculin testing all high school seniors in the county.

**Dr. S. A. Slater**, of Worthington, gave a report on Lyon County's recent tuberculin testing survey and presented the control accreditation certificate. **Dr. Kathleen A. Jordan**, of Granite Falls Riverside Sanatorium, presented certificates to the schools. **Dr. W. H. Valentine**, of Tracy, president of the Lyon County Tuberculosis and Health Association, was master of ceremonies.

\* \* \*

**Dr. John W. Gridley**, of Arlington, was in charge of the program of the Arlington Parent Teachers' Association meeting, held April 20, in the high school auditorium. The program accented the health of the school child.

\* \* \*

**Dr. Clarence Paul Winchell**, of the Heart Hospital, University of Minnesota Hospitals, presented case histories on heart disease in a speech to members of the Wright County Medical Society at their second clinical conference on cancer and heart disease, held in Howard Lake, April 14.

\* \* \*

**Drs. R. F. Pierson**, **D. Nywall**, and **J. L. Bader**, of Slayton, attended the meeting of the Southwestern Minnesota Medical Society, held April 13 at Worthington.

\* \* \*

The first in a series of eight lectures of a regional postgraduate seminar course, arranged for by the University of Minnesota, and sponsored by the Brown County Medical Society, was held April 7 at the Union Hospital in New Ulm. **Dr. Donald R. Lannin**, of Saint Paul, addressed the group on "Fractures in Children." **Dr. Lyle A. French**, of Minneapolis, gave the second lecture, April 14, "Head Injuries and Nerve Injuries." **Dr. O. B. Fesenmaier**, of New Ulm, is the local chairman of the course.

\* \* \*

**Dr. C. F. Cervenka**, of New Prague, attended the annual meeting of the American Association of Railway Surgeons, held in Chicago the week of April 6.

\* \* \*

**Dr. Leong Hom**, of Battle Lake, spoke at a public meeting on cancer sponsored by the Underwood Study Club, in the high school auditorium, April 16. The movie, "Breast Self-Examination," was also shown.

**Dr. Edgar R. Sather**, Alexandria, and **Dr. Edwin E. Emerson**, of Osakis, assisted in the Douglas County immunization program, sponsored by the county nurse, schools, and physicians, in April.

\* \* \*

**Dr. Joseph Buckley**, of the Department of Anesthesiology, University of Minnesota, talked on anesthesia from a general standpoint, to the members of the Red River Valley Medical Society at their annual spring meeting held at Thief River Falls, April 21.

\* \* \*

**Dr. W. F. Mercil**, of Crookston, attended the spring meeting of the State Obstetrics and Gynecology Society, held in Duluth, April 25.

\* \* \*

Honored at the annual dinner of the American College of Physicians in Atlantic City, April 16, was **Dr. Howard A. Rusk**, New York, N. Y., winner of the Mutual of Omaha Dr. C. C. Criss Award. The award, a gold medal and a \$10,000 honorarium, is presented annually as a memorial to the late Dr. C. C. Criss, founder of Mutual of Omaha. Dr. Rusk was chosen for the Criss Award from a field of 150 nominees by a board of judges, headed by **Dr. Charles W. Mayo**, of Rochester.

**Dr. Edward C. Kendall** and **Dr. Phillip S. Hench**, of Rochester, were winners of the 1951 Criss Award for their work with Cortisone.

The Criss Award is presented annually to the individual or individuals who have made outstanding accomplishments in the field of health or safety.

\* \* \*

The first in a series of Family Doctors' Days was held April 29, at the University of Minnesota. The Family Doctors' Day series is sponsored in an effort to bring about a closer relationship between the medical faculty and physicians in active practice in the state, **Dr. Robert B. Howard**, director of medical education at the University, said. The program for the first session included **Dr. Wesley W. Spink**, professor of medicine, speaking on "Antibiotics in Medical Practice," and **Dr. C. J. Watson**, head of the department of medicine, on "Case Presentation." The program closed with a clinical-pathological conference staged by Dr. Watson and his staff.

\* \* \*

**Dr. Jack Delmore**, of Roseau, president of the Red River Valley Medical Society, conducted the annual spring meeting of the society, April 21, at Thief River Falls.

\* \* \*

**Dr. G. K. Stillwell**, of the University of Minnesota physiotherapy department, was guest speaker at the annual meeting of the Duluth Health Council, held April 21, in St. Luke's Hospital auditorium.

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Dr. Mario Fischer, city health officer, led a panel discussion on rehabilitation.

\* \* \*

Dr. E. G. Olmanson, and Dr. M. E. Lenander, of St. Peter, were re-named to the hospital commission, at the organizational meeting of the St. Peter city council, April 14.

\* \* \*

Dr. Robert Pederson and Dr. W. E. Macklin, of Willmar, diplomates of the American Board of Radiology, began regular hours in Redwood Falls Hospital, April 22.

\* \* \*

Dr. H. B. Christianson, medical director of Parkland Sanatorium, Superior, Wisconsin, has resigned,

effective June 30. Dr. Christianson will begin a fellowship at the Mayo Clinic and Foundation, July 1.

\* \* \*

Dr. A. J. Lenarz, of Browerville, attended the medical staff meeting held at St. Michael's Hospital, Sauk Centre, April 14.

\* \* \*

Dr. F. H. Ellis, Jr., a Mayo Clinic fellow, joined the Nopeming Sanatorium staff for three months, in April.

\* \* \*

Dr. L. C. Kolb, consultant in psychiatry at the Mayo Clinic, was the guest speaker at an achievement program held, April 7, at the Rochester State Hospital. Seventeen psychiatric aides received



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Minneapolis

Minnesota

awards and certificates in recognition of at least two years of required experience in the Minnesota psychiatric aide program. **Dr. Conrad W. Baars**, director of education at the hospital, was master of ceremonies. **Dr. Magnus C. Petersen**, hospital superintendent, gave the welcome and presented the recognition awards.

\* \* \*

**Dr. W. H. Valentine**, of Tracy, attended a Railroad Surgeon's meeting in Chicago, April 9.

\* \* \*

**Dr. A. W. Jones**, of Red Wing, celebrated his ninetieth birthday, April 12. Dr. Jones retired two years ago after practicing for more than half a century, most of the time in Red Wing.

\* \* \*

**Dr. Haddon Carryer**, of Rochester, was the guest speaker at the Austin Nurses Club meeting, held April 8 at St. Olaf Hospital. Dr. Carryer spoke on the many modern aspects of treating disease.

\* \* \*

**Dr. Charles Schiefley**, former Browns Valley resident, now at the Mayo Clinic, stopped to visit in Browns Valley on his way to Aberdeen to speak before a medical meeting. Dr. Schiefley, who pilots his own plane, was accompanied by his son, Stevie.

\* \* \*

**Dr. A. L. Ourada**, of Ceylon, was named county health officer by the Fairmont County commissioners. Dr. Ourada succeeds **Dr. R. S. Hunt** of Fairmont.

\* \* \*

**Dr. C. A. Anderson**, of Hector, attended the meeting of the American Academy of General Practice, held in St. Louis, Missouri, the last week in March.

\* \* \*

**Dr. Robert W. Toon**, of Minneapolis, was married to Joan Marie Harvey, Minneapolis, May 2. Dr. Toon received his medical degree from the University of Oregon, and recently completed a five-year residency in surgery at the University of Minnesota hospitals. The bride is a student of nursing education at the University of Minnesota.

\* \* \*

**Dr. David Bodian**, of Johns Hopkins, and **Dr. Ralph S. Paffenberger, Jr.**, of the U. S. Public

Health Service, in presenting a study on polio at the American Society of Immunologists meeting in Chicago, April 10, paid tribute to Mayo Clinic physicians, **Dr. Lyle A. Weed**, **Dr. Thomas B. Magath**, and **Dr. Louis A. Buie**, for their work in polio research.

\* \* \*

**Dr. Arthur H. Wells**, of Duluth, was awarded the American Cancer Society's medal for Minnesota's 1953 "Man of the Year" in cancer control. The award is presented every year to the outstanding cancer control physician in each state throughout the country in conjunction with the American Cancer Society's annual fund-raising campaign.

Dr. Wells has been a member of the board of directors, Duluth district, American Cancer Society, and has served on the Minnesota Division's board of directors for the last eight years. He was president of the Minnesota division from 1948 to 1952, and currently is a member of the state executive committee. He served on the national cancer organization's board of directors in 1949, and presently is chairman of the cancer committee of the Minnesota State Medical Society.

\* \* \*

**Dr. Josiah Fuller**, of Rochester, spoke on chest surgery to the members of the Minnesota Nurses Association, Private Duty Section of Second District, April 15, at the meeting held at St. Mary's Hospital in Duluth.

\* \* \*

The Minnesota Academy of Ophthalmology and Otolaryngology met at Rochester April 10. **Dr. Kenneth Phelps**, of Minneapolis, president, presided. **Dr. T. G. Martens** was in charge of the scientific program and **Dr. Robert W. Hollenhorst**, chairman of the academy's council, was in general charge of the meeting. Four Rochester physicians to present papers were **Dr. John W. Pender**, **Dr. Kenneth Devine**, **Dr. H. L. Blair** and **Dr. John Lillie**.

\* \* \*

**Dr. Robert W. Goltz** and **Dr. Melvin L. Grais**, of Minneapolis, began an associated practice of dermatology at 1021 Medical Arts Building, Minneapolis, in April. Dr. Grais is leaving soon for military service and Dr. Goltz will carry on their joint practice.

*(Continued on Page 658)*



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## OF GENERAL INTEREST

(Continued from Page 656)

**Dr. C. E. Norberg**, of Cloquet, the city health officer, endorsed the 1953 American Cancer Crusade which opened in Cloquet, April 6.

\* \* \*

**Dr. William F. Braasch**, of Rochester, was named national chairman for the 1953 campaign of the University of Minnesota's Greater University Fund. Dr. Braasch received his Bachelor of Science degree from the University in 1900 and his medical degree in 1903. He served as director of the General Alumni Association for twenty-two years and as its president from 1928 to 1930. He retired in 1947 from the Mayo Clinic staff. In 1951 the University presented its outstanding achievement award to Dr. Braasch for his accomplishments in teaching and research in the field of urology.

\* \* \*

Services for Mrs. Geneve R. Kistler, wife of **Dr. Alvin J. Kistler**, of Minneapolis, were held April 18, at the Lakewood Cemetery Chapel. Mrs. Kistler was a member of the Hennepin County Medical Society Auxiliary, the board of the Jones-Harrison Home, and the Auxiliary of the International College of Surgeons.

\* \* \*

**Dr. Edward F. Gray**, of Saint Paul, began practice in White Bear in April, with his office in the Martin Building, 698 Third Street. Dr. Gray received his medical degree from Marquette University and interned at the City Hospital in Detroit. He served

in the navy for three and a half years during World War II.

\* \* \*

**Dr. Rose Valley**, of San Francisco, California, returned to Lake Minnetonka to live, in April. Dr. Valley practiced medicine in Minneapolis for over forty years before going to the West Coast.

\* \* \*

**Dr. P. A. O'Leary**, of the Mayo Clinic, attended a meeting of the chief editors of the American Medical Association, held in Chicago, April 18.

\* \* \*

**Dr. L. J. Kennedy** and **Dr. E. C. Burke**, of the Mayo Clinic, attended the area meeting of the American Academy of Pediatrics in Boston, the week of April 13. Dr. Kennedy is president-elect of the academy.

\* \* \*

According to the report of The Council on Medical Education and Hospitals of the American Medical Association which appeared in the May 9 issue of *The Journal of the American Medical Association*, admissions to hospitals in 1952 totaled 18,914,847 compared with 18,237,118 in 1951. The bed capacity showed an increase of 11,627 over 1951. The average length of stay of individual patients in governmental general hospitals was more than twice as long as non-governmental general hospitals—16.4 days as compared with 7.4 days.

\* \* \*

Some \$7,500 worth of new medical books destined for medical schools in Korea are part of the over-all

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OF GENERAL INTEREST

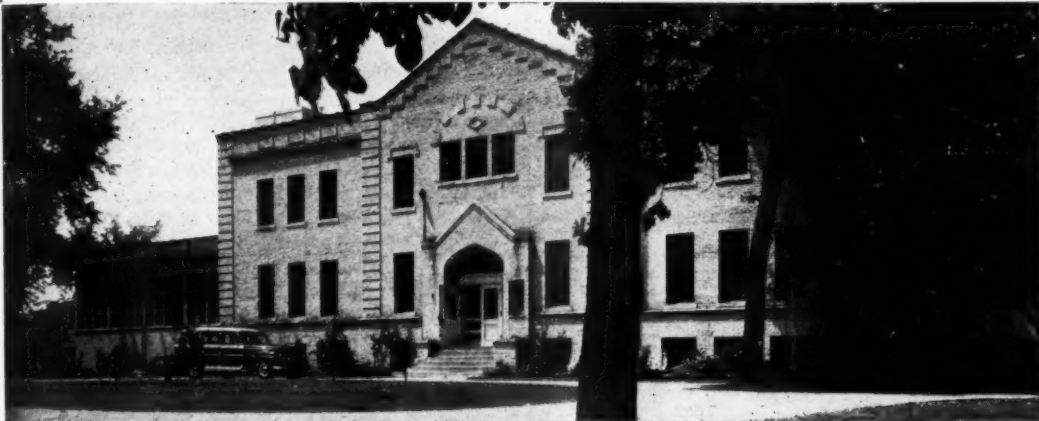
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total of \$200,000 worth of textbooks which will be sent to Korea by the United Nations Korean Reconstruction Agency through CARE. Ninety per cent of the medical books will be American and the balance English, French, and German.

\* \* \*

**Dr. Wesley W. Spink**, professor of medicine at the University of Minnesota, presented one of the first patients (Mrs. Ralph Bearman, 3819 Abbott Avenue So., Minneapolis) to be successfully treated with penicillin, to Sir Alexander Fleming of England, discoverer of penicillin, May 12. Dr. Fleming was in Saint Paul for the St. Joseph's Hospital centennial celebration.

\* \* \*

**Dr. Edgar D. Brown**, formerly of Paynesville, celebrated his eighty-fourth birthday April 11, in St. Petersburg, Florida. Among the guests were many of Dr. Brown's former students from the University of Minnesota Medical School where he taught from 1907 to 1937.

\* \* \*

Two Grand Rapids doctors—**Dr. J. A. Bolz** and **Dr. C. R. Ferrell**—left April 21, for at least two years of duty with the army medical corps. They reported to Fort Sam Houston, Texas, for training.

\* \* \*

**Dr. Ivan Baronofsky**, assistant professor of surgery at the University of Minnesota Medical School, spoke on cancer at the fifth physicians' seminar session, held April 28, at the Atlantic Hotel at Marshall.

**Dr. A. R. Reff**, of Crookston, served as a member of the Polk County Mental Health Committee during National Mental Health Week, May 3 through May 9. The Committee served as volunteer speakers on mental health before groups in the community requesting speakers.

\* \* \*

**Dr. L. B. Moyer**, of Belgrade, conducted the medical examinations for the pre-school clinic held April 28 in school district No. 215.

\* \* \*

**Dr. Albert G. Miller** has become associated with **Drs. Edward L. Strem** and **Sheldon C. Siegel** in the practice of Pediatrics and Pediatric Allergy, with offices at 711 Lowry Medical Arts Building, Saint Paul.

\* \* \*

**Dr. Clyde Undine**, of Minneapolis, was among those who attended the recent meeting of The American College of Physicians, held at Atlantic City, April 13 to 17, 1953.

\* \* \*

**Dr. John W. Schumacher**, of Minneapolis, was guest speaker at the Calvary Lutheran Brotherhood fellowship supper, held April 21, at the Calvary Lutheran Church, Golden Valley. Dr. Schumacher spoke on "Psychiatry and Religion" and afterwards, together with Reverend Fredrick Norstad, conducted an introductory panel which was followed by an open forum.

Dr. Schumacher, a graduate of the University of

OF GENERAL INTEREST



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Minnesota Medical School, has done postgraduate work in psychiatry and is now on the staff of the Minnesota Psychiatric Institute.

\* \* \*

Dr. G. J. Germann, of New Ulm, was named chairman of the Cancer Drive which was conducted in the city the week of May 4.

\* \* \*

Dr. Fredolph H. Magney, of Duluth, was reappointed for a second term to the board of medical examiners. The new term expired May 1, 1953.

\* \* \*

Dr. Ludolf J. Hoyer, of Windom, has recently had the office and storage space of the Windom Clinic enlarged.

\* \* \*

Dr. Fred W. Wittich, of Minneapolis, as president of the International Association of Allergy, opened the second European Congress on allergy held in Copenhagen, Denmark, May 20. He also attended and spoke at meetings of the French Allergy Society in Paris, and the Netherlands Society of Allergy in Utrecht. Dr. Wittich has been made a life-time honorary fellow of the Netherlands Society of Allergy.

\* \* \*

Dr. D. E. Stewart, of Crookston, addressed the Rotary Club on recent advances in chest surgery at the noon meeting held April 23. Dr. Stewart was introduced by the program chairman, Dr. C. G. Uhley of Crookston.

\* \* \*

Doctors from eight counties attended the meeting of the Upper Mississippi Medical Society and the Stearns-Benton Medical Society at a joint meeting held April 25, in Pine Edge Inn at Little Falls. Dr. A. M. Watson, of Royalton, was chairman in charge of the meeting; Dr. W. Hill, of Bertha, presided.

Dr. Earl Kanne, of Brainerd, gave a talk on psychiatric problems in general practice which was followed by a round-table surgical discussion led by Dr. Maynard Nelson, Dr. Earl Hendrickson and Dr. Daniel Moos, of Minneapolis.

Dr. Joseph B. Gaida, St. Cloud, president of the Stearns-Benton Medical Society, and a member of the Board of Directors of the University of Minnesota School Alumni Association, spoke on the new Medical Alumni Directory which is being compiled and will list all doctors who have graduated from the University since the beginning of the medical school.

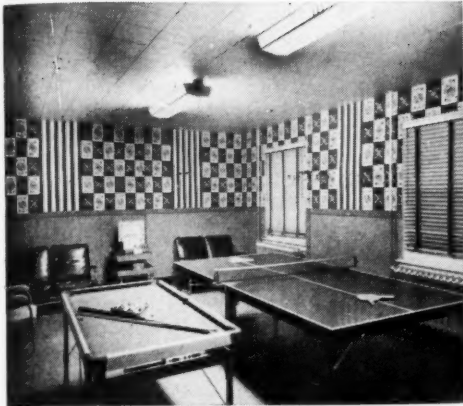
\* \* \*

Dr. C. H. Coombs, Health Officer for Cass Lake; Dr. M. Nordlund, and Dr. Sidney Finkelstein, of the United States Indian Service, assisted at the annual immunization school clinic for the Cass Lake Public Schools, April 28.

\* \* \*

An appreciation dinner honoring Dr. C. S. Donaldson's twenty-six years of service to the community, was held April 30 in Foley. Dr. Donaldson, who had practiced continuously from 1926 to 1953 in Foley, left to begin a partnership with Dr. W. B. Richards at the Richards Clinic in St. Cloud.

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Dr. Frank H. Krusen, of the section on physical medicine and rehabilitation, Mayo Clinic, spoke at the central states regional conference of the American Public Welfare Association, held at the Saint Paul Hotel, Saint Paul, April 27.

\* \* \*

Dr. John W. Gridley, Dr. R. H. Kath, and Dr. Thomas P. Martin assisted at the pre-school clinic held in the Arlington Public School, April 24.

\* \* \*

Dr. R. Wynn Kearney, of Mankato, has been named to head the new hospitalization program of the Mankato Civil Defense organization.

\* \* \*

Dr. Rudolph A. Beise, of Brainerd, Minnesota's representative, together with physicians from other states, seventy-five years old, honored by the medical societies of the United States and Latin America, named the five most important advances that he has witnessed—new immunization techniques, new drugs, identification of various disease germs, discovery of disease transmission by insects as in yellow fever and malaria, and blood and plasma transfusions. The three factors that have contributed most to medical progress in his lifetime, Dr. Beise said, are diphtheria antitoxin, insulin and antibiotics.

\* \* \*

Dr. James Roger Fox, University of Minnesota Medical School, spoke at the annual "Health Day" program of the St. Louis County Medical Society

Auxiliary, held in St. Luke's Hospital, Duluth, April 24. Dr. Fox appears on the "How's Your Health" television program under sponsorship of the University of Minnesota and the Minnesota State Medical Association.

\* \* \*

Dr. John Stam, of Worthington, was appointed April 22 as part-time medical director of Public Health District 5, succeeding Dr. Helen Wolff who resigned some months ago.

\* \* \*

Dr. Owen H. Wangensteen, professor and chairman of surgery in the University of Minnesota Medical School, spoke on "Scholarship" at the annual dinner of Nu Sigma Nu Medical Foundation (Epsilon Chapter), held in the Minnesota Club, April 18. Dr. E. S. Platou, of Minneapolis, director of a scholarship fund drive of the foundation, also spoke. Dr. Vernon D. E. Smith, of Saint Paul, was toastmaster.

Cornerstone of a \$100,000 Nu Sigma Nu Chapter House and Medical Foundation of the fraternity was laid at Oak and River Drive, Minneapolis, April 18. Participating in the ceremonies were Dr. Smith, who heads the building fund committee; Dr. William Hartfiel, Saint Paul Alumni Association and member of the National Executive Council, and Dr. C. Nau-mann McCloud, Jr., of Saint Paul, secretary.

\* \* \*

Dr. F. J. Kucera, and Dr. James A. Blake, of Hopkins, attended the University of Minnesota Continua-

# OF GENERAL INTEREST

tion Center Course in gastroenterology on April 27, 28, and 29.

\* \* \*

**Dr. A. D. Larson**, who practiced in the Herman vicinity for many years, was recently honored on the occasion of his ninetieth birthday at his home in California.

\* \* \*

**Dr. Carl Caspers**, of Minneapolis, was guest speaker at the Clay-Baker County Medical Society meeting, which was held May 2, at the Detroit Country Club, Detroit Lakes.

\* \* \*

**Dr. M. E. Odland**, of Detroit Lakes, talked on polio at the meeting of the American Legion Auxiliary, held April 27.

\* \* \*

**Dr. Olaf Lukk**, and **Dr. Robert L. Wilder**, of Minneapolis, were awarded prize ribbons in the annual Northwestern Hospital art show, held the week of April 27.

\* \* \*

**Dr. John W. LaBree**, clinical assistant professor at the University of Minnesota, spoke on "Essential Hypertension" at the fourth session, April 21, of the Southwestern Minnesota professional persons' medical meetings being held weekly in Marshall.

\* \* \*

**Dr. R. L. Anderson**, who has been living in Rockford, Illinois, for the past year and a half, returned to Willmar in April, and is now associated with **Dr. L. J. Opsahl**.

\* \* \*

**Dr. Robert S. Hunt**, who has been associated with his father, **Dr. R. C. Hunt**, in practice in Fairmont since 1940, left in May to practice in Portland, Oregon.

\* \* \*

The American Medical Association has just published a pamphlet "A Doctor for Your Community" which is intended primarily for communities seeking a physician. It describes briefly the problem involved in obtaining a doctor, the things a community can do to attract and keep a doctor and examples of what has been done in various communities throughout the country.

\* \* \*

**Dr. Peter Murray**, a Negro physician of New York, who has been serving as a member of the AMA House of Delegates, is the new president-elect of the Medical Society of the County of New York. He will take office in 1954. It is a post that no other member of his race has held in a medical society in the United States. **Dr. Murray** is director of the Department of Gynecology at both Harlem and Mount Sinai Hospitals in New York City.

**Dr. Gerald T. Evans**, director of the course in medical technology at the University of Minnesota, served as toastmaster at the annual dinner sponsored by Orbs, the campus honorary society in the field of medical technology, which was held in the ballroom of Coffman Memorial Union, May 14. **Dr. Wesley M. Spink**, professor of medicine, University of Minnesota, and **Dr. E. M. Brown**, medical technology faculty, were guest speakers.

\* \* \*

The Epsilon Chapter of Alpha Epsilon Iota, national medical sorority, was host to 153 women, licensed to practice medicine and living in Minnesota, at a buffet supper in the Hotel Saint Paul, May 17, to celebrate the 100th anniversary of the Minnesota State Medical Association. **Dr. Lillian Mayer Fink**, of Minneapolis, was general chairman. Other committee heads were **Dr. Eva Jane Ostergren Larson** and **Dr. Cherry Cedarleaf**, of Saint Paul; **Dr. Emma Nickelsen Fronk**, **Dr. Helen Knudsen**, **Dr. Eleanor Iverson Gunlaugson**, **Dr. Olga Hansen Litzenberg**, and **Dr. Catherine Corson West**, all of Minneapolis.

\* \* \*

**Dr. S. Steven Barron**, of Minneapolis, recently became engaged to Miss Lynn Keldan, of Chicago. **Dr. Barron** was graduated from the University of Minnesota Medical School and is now a member of the clinical faculty.

\* \* \*

**Dr. Paul Heise**, of Winona, spoke to the members of St. John's Parent Teachers' Association on "Children's Diseases," at the meeting held May 8.

**Dr. Heise** is a staff member of the Heise Clinic of Winona which was featured in an article by Irving Wallace in the May edition of *Better Homes and Gardens*.

\* \* \*

**Dr. Carl Bretzke**, a graduate of the University of Minnesota Medical School, will join the Klefstad Clinic at Greenbush, July 15.

\* \* \*

**Dr. Gordon R. Kamman**, of Saint Paul, spoke to the members of the Women's Auxiliary of the Minnesota State Medical Association, at a luncheon held in Saint Paul, May 19, during the 100th Anniversary Convention of the Medical Association.

\* \* \*

**Dr. George Earl**, of Saint Paul, was one of seven alumni of the University of Minnesota to receive an outstanding achievement award on May 22, 1953, at the hands of President Morrill. **Dr. Earl** is chief of staff of the Midway Hospital, Saint Paul. He is also the head of the Earl Clinic, Saint Paul, and one of the delegates to the American Medical Association House of Delegates. He has been for a

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## OF GENERAL INTEREST

number of years an associate editor of MINNESOTA MEDICINE and chairman of the Committee on Medical Economics of the Minnesota State Medical Association.

\* \* \*

**Dr. William B. Hildebrand**, Menasha, Wisconsin, was chosen president-elect of the American Academy of General Practice at the annual meeting of the Academy, held in St. Louis in March. He has been secretary-treasurer of the Wisconsin Academy of General Practice since its inception and has just retired as president of the board of directors of the Academy.

\* \* \*

At a meeting of the Blue Shield, held May 18, 1953, the following were re-elected to the Board of Directors: **Drs. O. I. Sohlberg**, Saint Paul, president; **R. R. Crammer**, Minneapolis, vice president; **C. A. McKinlay**, Minneapolis, secretary; and **E. C. Bayley**, Lake City, treasurer.

According to Arthur M. Calvin, executive director of the Minnesota Blue Shield, some 560,000 persons or one out of every six Minnesotans are now carrying medical insurance in the Minnesota organization. A total of \$3,600,000 has been paid out in benefits to Blue Shield subscribers during the past five years.

\* \* \*

**Dr. J. H. Reinhardt**, of Alexandria, left early in May for military duty with the Army Air Force. He reported to Guenther Air Force Base at Montgomery, Alabama, for training. During World War II, Dr. Reinhardt served with the army as a private, completing his medical education after his discharge from the army.

\* \* \*

**Dr. Byron Cochrane**, of Saint Paul, was among those awarded useful citizen citations at the Macalester Alumni Association's annual meeting, held May 29, at Macalester College.

\* \* \*

**Dr. I. L. Oliver**, of Graceville attended a short course in surgery, held at the University of Minnesota Center for Continuation Study, May 7, 8, and 9.

\* \* \*

### HOSPITAL NEWS

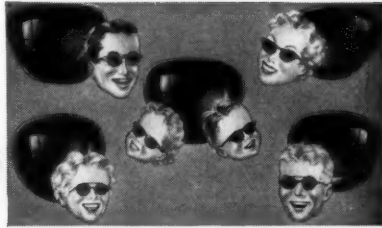
*St. Joseph's Hospital* in Brainerd opened its doors officially on April 20, 1953. It is one of the largest hospitals to have been built with federal assistance under the Hill-Burton Act, having a bed capacity of 129 beds and 24 bassinets.

The Hospital is operated by the Sisters of the Order of St. Benedict with Sister Adalbert, O.S.B., as superintendent. The new hospital replaces one which has been operated by the Benedictine Sisters of Brainerd for the last fifty-three years. The building is fireproof and its facilities are said to be as fine as those of any hospital of similar size in the country.

\* \* \*

On Saturday and Sunday afternoon, May 9 and 10, 1953, the new wing of the *Charles T. Miller Hospital* in Saint Paul was open for inspection to contributors and friends of the hospital. The new wing has been named for Dr. Harry B. Zimmermann who has been

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## OF GENERAL INTEREST

a member of the Board of Trustees of the hospital since its founding. This was a stipulation made by the late Louis A. Hill contingent on his contribution of \$500,000 to the hospital.

As a result of the expenditure of \$2,608,000 the new wing was built. This added eighty-seven new private rooms for patients, each with toilet facilities, air conditioning, oxygen, suction apparatus and communication system connecting patient and desk nurse. The addition furnishes new and spacious quarters for the laboratory and x-ray department, operating rooms, pharmacy and central supply department. The sixth floor has been extended and rebuilt for use as a psychiatric unit.

\* \* \*

Dr. P. A. Mattison was elected chief of the *Winona General Hospital* for the coming year, at the May meeting of the medical staff. Dr. L. I. Younger was elected vice president; Dr. Philip Heise, secretary, and Dr. J. A. Tweedy, chairman of the executive committee.

\* \* \*

Dedication ceremonies for the new million dollar *Bethesda Hospital* in Crookston were held Sunday, April 26. Featured speakers were Dr. Robert N. Barr, chief of special services, Minnesota Department of Health, and Dr. Helen Knudsen, also of the division of special services.

The new Bethesda Hospital with its seventy-seven-bed facilities, gives Crookston the maximum number of beds allowable by the Minnesota Department of Health. St. Francis Hospital, also comparatively new, has 140 beds.

\* \* \*

The *Yale University School of Medicine* has obtained a grant of \$2,500,000 from the Commonwealth Fund of Connecticut for the construction of a dormitory for both single and married medical students to be known as the Edward S. Harkness Memorial Hall. It will be located adjacent to the Sterling Hall of Medicine and the Grace-New Haven Community Hospital.

The Memorial Unit of the Grace-New Haven County Hospital which added facilities for 327 patients, a nurses' home, laundry, and dietary facilities for the entire hospital at a cost of \$9,000,000, was completed and dedicated in February. This unit increases the bed capacity of the hospital to 805.

\* \* \*

The Centennial celebration of *St. Joseph's Hospital*, Saint Paul, which occupied two days, Saturday and Sunday, May 16, 17, 1953, was most satisfactory in every way.

The scientific program which was held on Saturday was highlighted by visiting luminaries in the persons of Sir Alexander Fleming, the discoverer of penicillin, Dr. Philip S. Hench, the discoverer of cortisone, both Nobel

prize winners, and Dr. Richard R. Trail, director of Papworth Village Settlement, London. The afternoon session was open to the public who took advantage of the opportunity to become informed. Names of the other prominent members of the profession who took part in the celebration both days appear in the complete program which was published in our April issue.

Some 600 friends of St. Joseph's Hospital assembled on Saturday evening for the banquet at the Saint Paul Hotel. The program following the banquet was carried out with ability and dispatch by the toastmaster, the very Reverend George E. Ryan, Rector of the Cathedral of Saint Paul. The group of songs by Lucine Amara, soprano of the Metropolitan Opera Company, were fully appreciated. Greetings from representatives of state, city and hospital organizations and addresses by Dr. Harold L. Foss, president of the American College of Surgeons and the most Reverend John Gregory Murray, Archbishop of St. Paul preceded the musical numbers.

The July issue of *MINNESOTA MEDICINE* will be devoted to addresses presented at the St. Joseph's Centenary.

\* \* \*

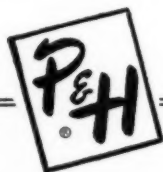
The remodeling and expansion of *St. Luke's Hospital*, Saint Paul, which was completed within the year, cost \$906,938. Of this amount, \$706,958 was obtained by pledges. The balance was met by increasing the mortgage to \$200,000.

The new wing which now houses operating rooms, x-ray department, laboratory, the obstetrical unit, and laundry, cost \$405,335; the new heating plant, \$144,481; new elevator, \$42,825; and remodeling the old building, \$157,754. One hundred thousand dollars was spent for new equipment.

\* \* \*

The *Ancker research unit* was officially dedicated at 3 p.m. Monday, May 25, 1953. The one-story air-conditioned brick structure adjoining the Ancker Hospital in Saint Paul is windowless and consists of x-ray department, laboratory, operating room, office, and kennels. It represents an outlay of approximately \$130,000 of which \$60,000 was contributed by the Ramsey County Welfare Board, the balance by private subscription. The Welfare Board has also agreed to contribute \$30,000 yearly for its support. Mr. George Vavoulis has been chairman of the fund-raising committee but Dr. Ivan D. Baronofsky, associate professor of surgery at the University of Minnesota, has spearheaded the project. This research unit at Ancker Hospital is the fifth to have been established in Minnesota. Already in operation are those at St. Joseph's Hospital, Saint Paul, the University Hospitals, Veterans Hospital, and the Mayo Clinic.

Participating in the dedication were Michael T. Ettel,



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## OF GENERAL INTEREST

chairman of the Welfare Board; Mayor John Daubney, of Saint Paul; Dr. T. E. Broadie, superintendent of Ancker Hospital; Dr. Victor Hauser, acting chairman of the surgical staff at Ancker Hospital; Dr. Baronofsky, and Mr. Vavoulis. Participating from the University of Minnesota were: Dr. Harold S. Diehl, dean of the University of Minnesota Medical School; Dr. Owen H. Wangensteen, chairman of the surgical department of the University; Dr. Maurice B. Visscher, head of the Department of Physiology at the University, and Dr. Frank Mann, director of medical research at the Mayo Foundation, Rochester, Minnesota, who made the principal address. He called attention to the epoch-making discovery of bacteria by Pasteur, the applications of the discovery to surgery by Lister, and the institution of anesthesiology a hundred years ago. These were the foundation stones that made modern medicine and surgery possible. It was animal experimentation, however, which contributed in large measure to medical advance during the past century. Dr. Mann told of the development of research in Minnesota and how his research began in the year 1913 at the time of the meeting of the American Medical Association in Minneapolis. He asserted that the main purpose of a research laboratory is to keep alive the spirit of research with emphasis on quality rather than quantity of the work performed.

Following the presentation of certificates to the project donors, those in attendance visited the new research unit.

\* \* \*

### MINNESOTA BLUE CROSS-BLUE SHIELD

The completion of the first quarter of operation in 1953 has provided an opportunity to evaluate the progress of Minnesota Blue Shield and to make a comparative study of the first quarter of 1953 and the first quarter of 1952. This analysis discloses that Blue Shield payments to doctors of medicine in the State of Minnesota were approximately 20 per cent higher during the first quarter of 1953 than they were during the first quarter of 1952. It also indicates that the load of claims being processed has now risen to a monthly average of approximately 12,000 claims. Factually, then, during the first quarter of 1952, approximately \$914,000 was paid to doctors of medicine by Minnesota Blue Shield while for the same period of 1953 these payments amounted to \$1,089,000. From this it is apparent that at least during the first quarter of 1953 Blue Shield benefits are averaging approximately \$60,000 per month more than they did in 1952.

These increases in Blue Shield payments are to a large extent the result of the liberalization of the Schedule of Payments and the changes in the contract which went into effect on October 1, 1952. This liberalization has had the effect of increasing the benefits more than 10 per cent without any increase in the premium charged for the contract. Not only was the Schedule of Payments increased and broadened in scope but likewise certain revisions were made in the contract itself in order to keep pace with changes occurring in the practice of medicine. These modifications of the contract included coverage for some items not previously covered as well as providing protection against the possi-

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## OF GENERAL INTEREST

bility of abuses so as to permit the income to be used in areas of greatest benefit to the subscriber.

The increase in the number of claims being processed now as compared with 1952 is also particularly illuminating inasmuch as the processing of these claims is being accomplished without additional administrative employees yet on a sound procedural basis with the continued elimination of "red tape."

With the increased number of claims resulting in a heavier work-load, acquisition of additional clerical personnel is neither contemplated nor considered necessary. Therefore, the cost of processing claims on a per claim basis is rapidly being reduced. This is also an indication that efficient methods are now in use and that the personnel in the Claims Department is productive. It should be pointed out that on October 1, 1952, the contract was revised and new benefits were added for services rendered on or after that date. This, in effect, increased the work load by requiring claims processing under two different contract clauses at times and two different Schedules of Payments. Fewer complaints and criticisms, relatively less correspondence, and a better understanding of the Blue Shield contract by physicians has resulted from the revised methods now in use.

Significant then are these facts: (1) Benefits in 1953 based upon the amounts paid in the first quarter may exceed four and one-half million dollars. (2) Costs of administration are now remaining stable in spite of an increased work load.

It can thus be noted that Minnesota Blue Shield as the doctor's instrument for providing high-grade prepaid

medical care at a cost which people can afford is accomplishing its purpose at a more rapid pace than has previously been anticipated. The continued co-operation of Minnesota doctors of medicine through the constant promotion of Blue Shield and its enrollment will provide a sound basis for its further development.

"A total of \$3,659,143 in benefits have been paid out for Blue Shield subscribers during the past year," Arthur M. Calvin, executive director of the Minnesota Blue Cross-Blue Shield plans announced at the Blue Shield annual meeting held at the St. Paul Hotel on Monday, May 18, 1953.

The executive director also announced that 560,000 persons—one out of every six Minnesotans, are now enrolled in the Blue Shield medical-surgical maternity plan.

Re-elected to the Board of Directors at the annual meeting of the members for a three-year period were: C. M. Bagley, M.D., Duluth; E. M. Hammes, M.D., Saint Paul; P. S. Hoeper, M.D., Mankato, and C. A. McKinlay, M.D., Minneapolis.

Re-elected officers of the Board of Directors at the annual meeting were: O. I. Sohlberg, M.D., Saint Paul, president; R. R. Cranmer, M.D., Minneapolis, vice president; C. A. McKinlay, M.D., Minneapolis, secretary, and E. C. Bayley, M.D., Lake City, treasurer.

The board of directors voted to increase benefits under the Blue Shield contract without any increase in rates. The Blue Shield benefits to be increased will be announced at a later date.



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## BOOK REVIEWS

### BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

#### BOOKS RECEIVED FOR REVIEW

**THE PHYSICIAN IN ATOMIC DEFENSE.** Atomic Principles, Biologic Reaction and Organization for Medical Defense. Thad P. Sears, M.D., F.A.C.P. Associate Clinical Professor of Medicine, University of Colorado School of Medicine; Chief of Medical Service, Veterans Administration Hospital, Denver; Member of Advisory Staff to Director of Civil Defense, State of Colorado; Member of Disaster Commission, Colorado State Medical Society; Colonel (MC) USAR. Foreword by James J. Waring, M.D., M.A.C.P., Professor of Medicine, University of Colorado School of Medicine. 308 pages. Illus. Price \$6.00, cloth. Chicago: Year Book Publishers, Inc., 1953.

**THE EPIDEMIOLOGY OF HEALTH.** A New York Academy of Medicine Book. Iago Galdston, M.D., Editor. 197 pages. Price \$4.00, cloth. New York: Health Education Council, 1953.

**THE INTELLIGENT USE OF THE MICROSCOPE.** First American Edition. C. W. Olliver. 192 pages. Illus. Price \$4.09, cloth. New York: Chemical Publishing Co., Inc., 1953.

**LIVING IN BALANCE.** By Frank S. Caprio, M.D. 246 pages. Price \$3.75. Washington, D. C.; The Arundel Press, Inc., 1951.

"Living in Balance" is written with a positive approach to understanding yourself and those about you.

It is very readable and will hold the interest of anyone wishing to improve personality.

F.A.

**ROENTGENOLOGIC DIAGNOSIS OF DISEASES OF BONES.** By David G. Pugh, Assistant Professor of Radiology, Mayo Foundation, Graduate School, University of Minnesota; Consultant, Section on Roentgenology, the Mayo Clinic. 316 pages. Illus. Price, \$5.00. New York: Thomas Nelson & Sons, 1951.

The fact that this book is reprinted from Nelson's loose leaf "Diagnostic Roentgenology" alone speaks for its nature. Dealing with bone lesions other than those produced by trauma, the material covered is presented completely and concisely. Since the radiologist is primarily a clinical consultant, each subject is introduced by its clinical manifestations which in turn are reflections of the basic physiological and pathological aspects of each disease. This is a refreshing approach in a roentgenologic work. The material covered is clinically practical having been drawn from the files of the Mayo Clinic, and, while including descriptions of such rare conditions as ochronosis and Fanconi's syndrome, it gives adequate attention to arthritis, congenital dislocation of the hip joints and other lesions seen oftener by the doctor. The way in which each subject is presented more or less independently enhances the value of

the book and the scarcity of elaborate tables and classifications adds to its readability.

The book has already established itself in radiological and academic circles and can be recommended widely to all those interested in the x-ray diagnosis of bone lesions.

LEO A. NASH, M.D.

**BRAIN SURGEON:** The Autobiography of William Sharpe. By William Sharpe, M.D., Director of Neurosurgery, Manhattan General Hospital, New York; Life Fellow American College of Surgeons and New York Academy of Medicine. 271 pages. Price \$3.75. New York: The Viking Press, 1952.

It is good to see a doctor's autobiography again, since these works are first hand histories of medicine and, also, provide entertaining reading. In the case of the autobiography of Doctor William Sharpe, both of these conditions are satisfied. Beginning in the classic manner as the son of a minister who started his career at Harvard University with the then existing equivalent of an athletic scholarship about 1900, he takes the reader through a colorful professional life as student, teacher, pioneer neurosurgeon and humanist. Among his friends and professional contacts we find many of the great medical men, to mention only Bilroth, Waldeyer, Lassar, Cushing and Dandy among others. He was an undergraduate classmate of Franklin Delano Roosevelt and in his later years met both Hitler and Stalin. His experiences are world-wide and at times actually seem to rival those of Walter Mitty. Pioneering in the practice of neurosurgery in New York City and numerous very

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#### POSTGRADUATE COURSES—1953

**SURGERY**—Intensive Course in Surgical Technic, two weeks, starting June 15, July 6, August 3  
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting August 3  
Surgical Anatomy and Clinical Surgery, two weeks, starting June 15, August 17  
Fractures and Traumatic Surgery, two weeks, starting June 15  
Esophageal Surgery, one week, starting June 22  
Breast and Thyroid Surgery, one week, starting June 22  
Gallbladder Surgery, ten hours, starting June 29  
Surgery of Colon and Rectum, one week, starting September 21  
Basic Principles in General Surgery, two weeks, starting September 21  
General Surgery, one week, starting October 5  
General Surgery, two weeks, starting October 12  
Thoracic Surgery, one week, starting October 12

**GYNECOLOGY**—Intensive Course, two weeks, starting June 15, September 21  
Vaginal Approach to Pelvic Surgery, one week, starting August 31

**OBSTETRICS**—Intensive Course, two weeks, starting October 5

**MEDICINE**—Intensive General Course, two weeks, starting September 28  
Electrocardiography and Heart Disease, two weeks, starting July 13

Allergy, one month and six months, by appointment  
**CYSTOSCOPY**—Ten-day Practical Course starting every two weeks

**UROLOGY**—Intensive Course, two weeks, starting September 28

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## BOOK REVIEWS

human incidents are cited indicating a full life professionally and otherwise ending with the philosophies of a humanist. But, what else could one expect from anyone exposed to such experiences? Lay reviewers have described Dr. Sharpe as a connoisseur of living but this is only a lesser aspect of the man as we interpret his life. Aside from not having real literary value, the only criticism we find is the presentation of a controversial matter on the etiology and prophylaxis of cerebral palsy which lay readers cannot evaluate failing to understand that there are honest differences of opinion in medicine. This does not detract from the value of the book, however, and it is fully recommended as diversional reading for doctors, particularly by those who can be classed as his contemporaries.

LEO A. NASH, M.D.

**ALLERGY IN RELATION TO OTOLARYNGOLOGY.** French K. Hansel, M.D., M.S., F.A.C.A., Editor-in-Chief, *Annals of Allergy*; Director of The Hansel Foundation; Associate Professor of Otolaryngology, Washington University School of Medicine. Panel Discussion. 77 pages. Price \$2.50. Saint Paul: Bruce Publishing Co., 1949.

This book consists of an initial discussion of the subject material by Dr. Hansel. Various aspects of the subject are then discussed in turn by a panel of nine other men who are well known otolaryngologists and allergists.

The importance of this discussion is brought out by the high percentage of patients reporting to these doctors with nasal symptoms, who were found to have an allergic etiology. Dr. Hansel has clearly described his technique for staining the nasal and sinus secretions for eosinophils. This is followed by colored plates and a method to be used in evaluating the results obtained from these stained smears.

This book is an official publication of The American College of Allergists, Inc.

DONALD W. KOZA, M.D.

## HOW TO GET A DOCTOR— BOOKLET AVAILABLE SOON

A new pamphlet—"A Doctor for your Community"—will be published some time this month by the American Medical Association. This booklet, directed toward communities seeking a physician, describes briefly the problems involved in obtaining a doctor, the things a community can do to attract and keep a doctor, and examples of what has been done elsewhere. A joint project of the Council on Medical Service, Council on Rural Health and Department of Public Relations, the booklet will be available to state medical societies for distribution to communities listed with their placement services.

In addition, the Council on Medical Service has compiled information from numerous state placement services in a reprint which will be especially useful to state societies interested in expanding their activities in this field.

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## CALIFORNIA

A new illustrated booklet is available, describing the hospitals of the California Department of Mental Hygiene and listing the professional opportunities there. Physicians are invited to write for this publication.

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